Lecture
ON THE
DIAGNOSIS OF SURGICAL DISEASES OF THE URINARY ORGANS,
ESPECIALLY IN CONNEXION WITH THE USE OF THE "NIETZE-LEITNER" ENDOSCOPE.

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[HAVING devoted the former part of the lecture to the best means of forming a diagnosis in ordinary cases, the lecturer continued :—]

And now having discussed the various modes of forming a diagnosis in any given case, by questioning the patient as to his symptoms, by observing his external signs, by examining the urine with tests and by the microscope, and lastly by mechanically exploring, by means of the finger and instruments, the rectum, urethra, and bladder itself, it is natural to ask—Does any further mode of inquiry exist?

At this point it has been always my custom to reply, there is still the endoscope, whatever it may be worth; an apparatus which offers the means of reflecting a ray of light from a lamp external to the body through a tube into the interior of the bladder, and so illuminating a small portion of the surface there. Of the various forms of this instrument which have been proposed from time to time by Avery, Desormeaux, Cruise, and others, not one has appeared to me capable of rendering much practical service, either in regard of diagnosis or treatment. The endeavour to improve it has, however, been steadily pursued, and not a little interest was excited some months ago by a report that, after much labour, an instrument had been invented at Vienna capable of carrying a powerful electric light into various cavities of the body, and of producing brilliant illumination there. My friend, Professor Dittel, wrote to me last spring that this was an accomplished fact, and that I should soon be able to see the new apparatus, and to work with it if I wished. I accepted his invitation, and went recently to Vienna for the purpose, and I was very glad to avail myself of his kind and assiduous services in enabling me to see it, and to use it repeatedly on the living subject, both in health and disease.

It is certainly a daring achievement to carry a platinum wire heated to whiteness into the bladder, and to use it there for some minutes in the act of research; and it is a marvellous success as regards the mechanical arrangement by which this result is effected with safety. The idea originated with Dr. Nietze, now of Vienna, but its realisation is due to the patience and perseverance of Leitner, the surgical instrument maker of that city. I will briefly describe it, and then say as fairly as I can what it appears to be able to accomplish.

The apparatus consists of a stout wooden table, containing instruments, &c. Attached to it is a light stage, several feet high, supporting a vessel of water; and on a frame near the floor is the electrical battery with its appliances. This apparatus is placed by the side of the patient, who should be recumbent on an ordinary operating table, so as to occupy a height convenient for the purpose of examination. It may be thus used in an ordinary ward, but it is more efficient in a darkened room, like that ordinarily employed for the ophthalmoscope.

The electrical current is produced by two rather large Bunsen cells, and the positive and negative conductors, two long and slender wires, are attached to a hollow silver sound of the ordinary form for examining the bladder, by means of a movable collar round its handle, one of the wires entering a small channel in the sound itself, which it traverses to the end. Arriving there it enters a cavity within the beak, and joins a platinum wire there about half an inch in length, the other end of which is soldered to the metal of the sound, and the latter itself forms the connexion with the opposite wire or pole. The platinum, which becomes incandescent on the completion of the current, is covered by a glass plate isolating it from lateral contact. Finally, the end of the sound which contains the platinum wire has to be kept perfectly cool by special means adapted to the purpose.

The means by which this is accomplished consists in the maintenance of a constant current of cold water supplied from a reservoir, containing about two or three gallons, placed seven or eight feet above the operator. The current descends through a small flexible tube to the collar of the instrument already described, and connected there with two capillary channels in the body of the sound itself. These measure only one millimetre and a half in diameter, and pass through the whole length of the sound, coursing round the heated wire at its termination, so that the water is constantly flowing in by one tube and out by the other, to issue finally drop by drop through the returning tube into a vessel placed to receive it. The collar of the sound, then, has four flexible tubes attached to it, two for the electric current and two for the water current. Holding the collar with the left hand, the operator easily rotates the sound with his right, when on looking through a central cavity forming the axis of the sound, any portion of organ adjacent to the end of the sound is seen to be brilliantly illuminated. A small piece of gravel, a pellet of mucus, the rugæ and sinuses of the mucous lining of the bladder, of its natural tint, or with an inflammatory injection, may all be most clearly seen.

As a triumph of mechanical skill over extreme difficulties, it is impossible to admire the performance too much. But it is necessary, on the other hand, to remark that much preparation of the bladder itself is necessary; that some irritation of the organ must be regarded as a highly probable result—as, indeed, is often unavoidable from the use of this or of any other endoscope. If the urine is bloody or cloudy with mucus, nothing is visible; the bladder must be washed, and then be partially distended with clear water or with air before the instrument can be applied. If the urine is quite clear no preliminary washing is necessary, and a few ounces should be present in the bladder.

I felt it my duty to make, as carefully as I could, an appreciation of the new instrument, and to report upon it; and I shall further have an opportunity shortly of showing it to you here, that others may form a judgment also. I may add that it is very easily used in the rectum, and that it has also been introduced into the stomach without difficulty, which it equally illuminates; the bladder being the most difficult organ to deal with, on account of the narrowness of the channel which leads to it.

Now it is with great deference to the opinion formed by high authorities at Vienna, who are very sanguine as to the value of this instrument for the purposes of diagnosis, that I venture to express in cautious terms my own views as to its use. First, I do not regard it as likely to help us in cases of difficult stricture or retention of urine. Nor do I conceive that it can be required to explore a bladder for any remaining fragments after the operation of lithotrity. I think all that is necessary to be done in such circumstances can be as well done by the methods at present commonly employed, and that the use of the endoscope for such would generally involve additional and unnecessary interference. At the same time I do not say that such a case may not occasionally be met with, in which the instrument might render some service. On the other hand, there are some morbid conditions the existence of which we sometimes suspect, but cannot positively affirm to exist, whose presence may now be ascertained through the agency of the new endoscope. I refer to the identification of sacculated stone as the cause of persisting and unrelieved symptoms; to the detection of pedunculated growths and of villous disease of the bladder, removable by operation; and, lastly, to the investigation of the nature of foreign bodies, other than calculi, which have become lodged there. I have lately seen a fatal case of vesical growth which might have been easily removed by operation; and in such a case, as well as in the rare contingency of a foreign body, the new endoscope may possibly render essential service. A precise knowledge of the nature, size, and position of a foreign body might enable us to devise a safe and certain means of removing it, in place of a tentative, uncertain, and hazardous proceeding. All these cases, however, are more or less rare; nevertheless it is our duty to be provided with every resource, whatever

it may be, which enables us to deal more effectively than heretofore with conditions on the management of which grave issues depend.

Clinical Lecture
ON
CASES OF IMPEDED CIRCULATION.

Delivered in St. Mary's Hospital,

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GENTLEMEN,—The subject we are about to consider is one which has been greatly elucidated of late years, and is still receiving the attention of some of our best workers. Let me ask you to make it the subject of your careful study, and in this you may be materially aided, I venture to think, by the cases and comments I proceed to bring before you.

CASE 1. *Bronchial catarrh; dropsy; double aortic murmur; fatal syncope; dilatation of aorta; aortic valves competent; kidneys atrophied moderately.*—G. G. M——, aged forty-nine, admitted April 19th, 1876. His chest has been weak, and he has had bad cough for three or four years. Says he has been out of health five or six months. He got fresh catarrh three months ago, and has not been able to work since. His legs are very much swelled; have been so about a month. Pulse 100, feels full, large, jerky. Loud double murmur at mid-sternum and xiphoid, and at upper sternum. Loud diastolic murmur at nipple line in fifth space. Lies down well. Breath markedly urinous in fetor. Temperature 98°. Ordered compound jalap powder, one drachm every morning; citrate of potash mixture one ounce, nitrate of potash five grains, three times a day; warm bath.—20th: Breathing in both backs very feeble, especially at lower parts; much mucous râle heard in upper backs, weaker râle in lower. Face pale. An attack of semi-syncope occurred some time before, and a second during the visit. His pulse while lying down seemed good and full, but while sitting up to be examined it became very small and weak. He had spit up some small masses o blood. Ordered solution of perchloride of iron ten minims, tincture of digitalis twelve minims, compound spirit of sulphuric ether half a drachm, water one ounce, three times a day. He rallied from this faint, and became very comfortable. Another attack, however, came on, and he died 1.15 A.M. on the 21st. No note, unfortunately, has been preserved of the state of the urine.

Post-mortem.—A large amount of turbid serum in right pleural cavity. Left lung tolerably healthy. Right contained near apex a block of extravasated blood as large as a walnut or small apple; the rest of this lung was œdematous. In the apex of left lung there was a mass of old cretaceous tubercle of pea size, enclosed in a thick envelope of fibroid tissue; there was also cretaceous matter in glands about the bronchi, but there was no appearance of miliary tubercle anywhere. The heart weighed 24½ oz.; its right cavities were full of black clot; the right valves were healthy. The left sigmoid valves appeared competent when tested by pouring water into the aorta; the mitral were less efficient, but showed no notable thickening; the mitral orifice only admitted three fingers. The aorta was very much dilated at its origin, and in all its thoracic extent; at one part, a little below the termination of the arch, its posterior outer wall was bulged considerably, forming a sort of elongated pouch, on the interior of which was seen (when the vessel was laid open) a deposit of pigmented fibrine. The coats of the aorta were highly atheromatous. The heart's muscle was of a good red colour, and showed no sign of fatty degeneration. The liver weighed 61 oz., was highly nutmeggy and fatty; its cells formed a perfect plexus of fatty columns. Spleen rather small and dark, weighed 6½ oz. Kidneys looked small and lobulated; each weighed 4½ oz.; surface after removal of capsule was slightly granular. The renal tubes were not broken up, but were often much infarcted with granular fatty epithelium. The arterioles of the subcutaneous tissue of the calf of the leg appeared to have thickened walls, and sometimes a dense outer fibrous investment, but I could not determine whether they were simply contracted or sclerosed.

Remarks.—That the disorder in this case was to a great extent of uræmic origin can hardly be doubted. Yet I do doubt whether this expresses all that is to be said of its causation. For cases are common where uræmia has long existed without producing such effects as were witnessed here. Some other factor besides the uræmia must, I think, have concurred with it to produce the results. However this may be, the history affords a very remarkable example of the effects produced by obstruction of the circulation in its periphery. The hypertrophy and dilatation of the heart, whose muscular tissue was not degenerated, the general dilatation of the aorta, which was so great as to render its valves incompetent, the local bulging of a part of the aortic wall, and, finally, the death by syncope from cardiac exhaustion, all indicate the existence during life of a great increase of peripheral resistance and consequent backward pressure. The exact seat of the obstruction cannot be determined, but it may be remarked that microscopic examination did not show sufficient ground for affirming it to be in the arterioles.

CASE 2. *Dropsy; ascites and anasarca; albuminuria; cordy pulse; great improvement; recurrence of symptoms; death; autopsy.*—W. H——, aged fifty-six, labourer, admitted July 20th, 1877, states that he was in St. Mary's some years ago with similar symptoms, but recovered and remained well until six months ago. He was then taken ill with short breath, some cough, mucous expectoration, and some anasarca. There is now much collapse of lower chest-walls in inspiration, especially when deep. No dulness in either back. Air entered well in upper half of left; more weakly, with crepitations, in lower. Same state nearly in right back. Breathing full and free in all right front, not so much in left, but no morbid sounds in either. Heart's dulness area appears about normal. Impulse not perceptible to hand or eye. Sounds rather weak at midsternum, and apex in fifth space, rather more distinct at xiphoid. Pulse 100, small and weak, but cordy. Abdomen measures 36½ inches over umbilicus. The depending parts of both flanks are notably dull on light percussion. The hepatic dulness extends fully four fingers' breadth below the right ribs. Urine is rather scanty, sp. gr. 1025, moderately albuminous, deposits a scanty whity sediment, containing a very few slender homogeneous casts. Ordered milk, beef-tea; solution of muriate of iron twenty minims, oxymel of squills one drachm, tincture of digitalis five minims, in an ounce of water, three times a day.—26th: Is mending fast. Abdomen measures 35½ inches. Urine pale, sp. gr. 1015, contains the faintest trace of albumen. Lower ribs expand in inspiration. Legs now quite free from œdema. Arm veins full as on admission.—August 2nd: Breath not short; gains strength every day; very little expectoration; good breathing in both backs. Pulse as cordy as possible. Veins large and full in both arms. Urine notably albuminous. Abdomen measures 31½ inches; resonant all over. Goes out. Continue medicine with the exception of tincture of digitalis.

He was readmitted Sept. 18th, 1877. Abdomen measured 37½ inches. There was considerable dropsy of the legs and belly; breath very short; he expectorated a good deal of muco-pus. Temperature up to Oct. 5th was about, or a little below, the normal. He had taken carbonate of ammonia, decoction of senega, bitartrate of potash electuary, until Oct. 1st; then solution of perchloride of iron, oxymel of squills, tincture of digitalis, and spirits of chloroform. On the 4th the pulse was very weak, as it had been several times before. The artery, though full and rolling distinctly under the finger, and traceable a long way up the arm, was yet quite compressible. The urine contained a good deal of albumen. He brought up in twenty-four hours about four ounces of muco-purulent expectoration. There was no dulness in the backs, but the air entered very imperfectly in the lower half, or rather more, of each lung. The veins of the arms were full, and those of the neck, and regurgitation was very evident in the anterior jugular. The heart's dulness-area did not seem unduly extensive; its impulse was not apparent; the sounds were normal; the rhythm regular. He had broth and eggs and custard. On Oct. 8th the dose of solution of perchloride of iron was raised from twenty minims to one drachm. He had an oblique right inguinal

hernia. The abdomen continued to enlarge until on Oct. 24th it measured 41½ inches, in spite of a good deal of diarrhœa which occurred from about the 14th to the 20th. Several attacks of threatening syncope ensued about the same time. In one, which I witnessed, his face was very pale, and covered with large beads of sweat. In the intervals of these attacks his pulse was sometimes of tolerable force; it was arrested on Oct. 16th by 230 grammes. The jugular veins on Nov. 1st were prodigiously enlarged, but there was no venous pulsation until after paracentesis had been performed, and over eight pints of fluid removed. On Nov. 3rd there was most marked pulsation in the right jugular, which was much less distended than on the 1st. The radial pulse was very weak and small; the hands coldish; the dropsy of belly and legs unchanged. A few days later he was attacked with violent vomiting; brought up over twelve pints of thick yellow stuff in one night. The pulse failed, and he died Nov. 8th.

Post-mortem examination.—Both lungs intensely engorged with blood, and the cut surface of a blackish colour; floated in water; no putrescent odour; both were firmly adherent to ribs. Clots in both pulmonary arteries, of a whiteish hue at commencement. Mucous membrane of bronchi in both lungs much injected and covered with mucus. Heart much enlarged; weight twenty-two ounces; muscular fibre fairly healthy on both sides. Both left chambers dilated and filled with black clots. Right auricle gorged with blood; a large ante-mortem clot in right ventricle; both cavities much dilated. All the valves normal. Thickness of wall of left ventricle 18 mm. General recent peritonitis; under surface of diaphragm covered with fresh lymph. About 3000 cc. of fluid holding particles of fibrine suspended in serous cavity. The peritonitis had not spread from the orifice made by paracentesis, for the parietal layers were very little affected. A hernia, not strangulated at all, twelve inches from the ileo-cæcal valve on right. Spleen hard and red; capsule thickened. Both kidneys had adherent capsules; the surface after their removal was granular. The left kidney contained two superficial cysts, one of them three-quarters of an inch in diameter. The kidneys appeared generally enlarged, but the cortical part was somewhat atrophied; each weighed seven ounces. The cortical tubes were more or less infarcted with epithelium; some of them opaque from their fatty contents, consisting of large cells and masses of epithelium thick set with fatty molecules. Their basement membrane was well marked; the Malpighian tufts appeared pretty normal. The medullary tubes were very commonly infarcted with a soft granular mass, containing fatty particles in varying quantity, sometimes in large amount; their basement membrane was strong; the bands of the matrix were thick. Liver was fatty and enlarged.

A portion of the connective tissue from the anasarcous right thigh or leg showed very numerous and perfect bands of white fibrous tissue. Treated with acetic acid, several small vessels are brought into view. Some of these, or some parts of the same, are very opaque; others show a distinct channel, which cannot be seen in the opaque. In the latter it seems as if the nuclei of the circular coat, and the exterior, were abnormally multiplied, and crowded together so as to cause obstruction to the channel. These opaque vessels, or portions of vessels, do not appear narrower than those which have a channel.

Remarks.—The cardiac hypertrophy in this case was very considerable, more than seems likely to have been produced by the moderate amount of renal disease. The lesions in the kidneys were not advanced, and the swollen and fatty state of the epithelium may have been caused to some notable extent by the congestion of internal organs occurring during the last few days of life. The arterioles of the subcutaneous tissue presented appearances of sclerotic change, but I cannot affirm that these may not have been due to a sort of rigor mortis of the vessel, or of a portion of it. Assuming that sclerosis of the arterioles really did exist, it seems to me most likely to have been the chief cause of the cardiac hypertrophy. The existence of obstruction to the arterial blood-stream, and the gradual failure of the heart in its struggle against it, was extremely apparent. When the patient left the hospital early in August, to outward seeming well, his radial was as firm and cordy as it well could be; at each beat the cardiac force elongated and curved the vessel, which remained full between the beats. The heart was then acting with vigour, maintaining the circulation fairly well, and the dropsy had vanished. After his readmission the heart soon gave signals of distress in alarming attacks of semi-syncope. The radial remained full, rolling under the finger, and traceable a long way up the arm, but quite compressible, and its beat at times very weak. Evidently the impelling power of the heart was growing weaker, though the artery remained full. Synchronous with the decline was the increase of the dropsy, both in belly and limbs. Before long peritonitis ensued, and fatally inhibited the enfeebled heart. Both during life and at the autopsy the signs of venous engorgement were very conspicuous in the distension of the jugulars, and (after death) in the repletion of the right cavities and intense congestion of the lungs. This condition was brought about partly, no doubt, by the bronchitis, partly by the slackening of the arterial current, and consequent loss of *vis à tergo* in the venous, but chiefly by the difficulty which the left heart experienced in expelling its contents into the already full arteries. Michael Foster says if the left ventricle gave out less than the right, all the blood would soon be crowded into the lungs. Probably this actually did occur to a notable extent in the later period of the malady; in fact, it seems that this must ensue to a greater or less degree in all conditions where the blood-current suffers obstruction in the left heart, either from valvular lesion or weakness of cardiac muscles or peripheral resistance.

CASE 3. *History of scarlatinal nephritis; urine apparently normal throughout; extensive anasarca; right pleural effusion; heart's first sound reduplicated, no murmur.*—A. R——, aged twelve, admitted May 13th, 1879. He had scarlet fever two years ago; his skin was never red, but peeled as the fever declined. Three weeks or a month after the scarlatina the kidneys were affected, and pneumonia occurred at the same time. He was in this hospital last December; he was not dropsical when he left, but now both legs and scrotum are highly anasarcous. His urine has been like blood, his mother says, staining the vessel; at present it is full-coloured, clear, not albuminous. Skin cool. Pulse weak, rather cordy. Heart-sounds distinct; no murmur; its dulness-area appears increased towards the right, but this is probably from pleural effusion, the right front being dull below the second space, and the right back generally dull also, and almost void of breathing, except some weak sound at the upper part. The left back is resonant throughout, and the breathing there is fairly good. In the right front and lower left breathing is very weak. Bowels open once a day. Lies very quiet. Ordered tincture of digitalis, five minims; iodide of potassium, one grain; citrate of potash mixture, one ounce,—four times a day. Warm bath. Half ordinary diet, beef-tea, and milk.—15th: He could be kept in the bath only about five minutes, as his breathing became so distressed. The dyspnœa continued after he was removed, and he was even worse four or five hours after the bath than when he was in it. His mother states that he has had similar attacks after exertion for many months. Cough was troublesome during the night. Pulse 110; respiration 42. Passes a fair quantity of urine, which is sherry-coloured, acid, of sp. gr. 1020, and not albuminous. Bowels open freely by compound jalap powder. Legs much less swollen. Right chest front more extensively dull. Left side of abdomen dull nearly to median line, right side resonant; the dulness shifts with position. First sound of heart reduplicated at mid-sternum and at apex, but less markedly.—19th: Repeat mixture with iron wine.—June 2nd: Ordered iron and quinine, with iodide of potassium.—3rd: Right shoulder much lowered, and spine curved, convex to left. Right chest dull throughout, marked bronchial breathing in front; very weak breathing in all the back. No fremitus on either side. Right chest measures over nipple 12¼ inches, the left at the same level 13¼ inches. Urine not albuminous. Repeat mixture given on May 13th.—13th: Very prostrate this morning. Urine of full colour, clear, contains no sugar or albumen. The ward sister notices very positively the same odour in his breath which was observed in a man dying recently with symptoms resembling those of acetonæmia.—16th: Lies very silent and quiet. To have solution of perchloride of iron and spirit of chloroform.—19th: Pulse very weak, 36; temperature 97°, or a little below; had been so throughout. Both feet œdematous. The tracing presented a more or less flat top, a long diastole, early and slight or no dicrotism, a sloping rise of varying height. Urine not albuminous.—26th: Condition much the same. Pulse very weak and irregular. He lies very quiet, taciturn, and drowsy, scarcely opening his eyes for hours together. Urine a few days ago was 25 ounces in twenty-four hours,

sp. gr. 1026; temperature remains subnormal.—30th: Urine in twenty-four hours 18 ounces, sp. gr. 1029, clear. Both lower limbs œdematous. Seems better in himself; is taking, last four days, strychnine $\frac{1}{30}$ gr. in each dose of his medicine. —July 9th: Anasarca, which had much declined, has become considerable again; his thighs are a good deal swollen. He seems much brighter and better in himself; passes more urine than he did a week ago. Abdomen is dull at the depending parts. The chest-walls collapse very markedly during inspiration at lower and anterior regions. Heart-sounds free from murmur; apex-beat not discernible. Air enters left lung well, the right feebly; the breathing in it is weak and quasi-bronchial.—14th: Legs are much swollen and tender.—Up to Aug. 8th he remained in nearly the same condition; pulse on 6th was 80. He then began to take ten minims of solution of pernitrate of iron, five grains nitrate of potash, twenty minims spirit of nitrous ether, twenty minims compound spirit of juniper, three drachms infusion of digitalis, to an ounce of water, three times a day, and a wineglassful of Hunyadi János every morning. Under this he improved materially; the anasarca disappeared from the genitals and legs, though some remained in the feet. The right chest continued in about the same state, the right shoulder much depressed. He went out Aug. 28th. The heart's sounds to the last were indistinct, but there was no murmur.

The principal question that arises in considering this case is as to the cause of the dropsy. Was it renal, or cardiac, or dependent on the pleural effusion? It looked very much like renal, especially with the distinct history of scarlatinal nephritis. But against this view lies the great fact that the urine, examined again and again over many weeks, was never found albuminous, nor in any other respect corresponding to the hypothesis of renal degeneration. Its quantity was, as far as the report goes, fairly good, and its density indicates that an ample elimination of solid matters took place. Urine of sp. gr. 1026, and in quantity amounting to 25 oz. on one occasion, and on another having a sp. gr. of 1029 and equalling 18 oz. in quantity, testifies strongly in favour of the efficiency of the secreting apparatus. The kidneys may have suffered some damage in the attack of nephritis two years before, but they must have recovered functional power to a very great extent. I can no more believe that a man who walks well has a broken leg than that kidneys which secrete well are seriously unsound.[1] Was the dropsy, then, of cardiac origin? The negative is established, I think, by the circumstance that repeated examinations of the heart discovered only two abnormalities—namely, absence of discernible apex-beat—a point of significance in a young person—and reduplication of the first sound. Both these features might well be present supposing considerable peripheral obstruction to exist, but neither of them countenances the view of primary heart disease, though they do very decidedly that of secondary. Hypertrophic dilatation with altered form of the left ventricle, and derangement of synchronism in the action of the two ventricles, are ordinary results of peripheral arterial obstruction. The lung mischief was almost confined to the right side; and as I have never seen general dropsy in uncomplicated cases of pleuritis with effusion, I cannot consider that this occurred here.

Rejecting, then, the three above-named causes, we seem, *par voie d'exclusion*, to be obliged to adopt the Gull-Sutton theory, that a change existed in the minute arteries which impeded the passage of the blood into the capillaries and veins, and thus caused distension of the arteries and of the left ventricle. That general dropsy may occur under these circumstances seems to me an established fact. The occurrence of dropsy in this and similar cases appears to be best explained by a reference to Cohnheim's observations, showing that the small vessels of a part in which blood is completely stagnant suffer in their nutrition to the extent of undergoing necrosis. It seems, therefore, reasonable that in minor degrees of the same condition, when the blood-stream in a part has long been moving languidly, the capillaries should become so altered as to lose more or less of their retentivity, and allow serous fluid to escape through their walls. While, of course, the effect of undue pressure on the capillary walls is incontestable, it has not, perhaps, been sufficiently considered that in all cases of mechanical dropsy there must exist also more or less stagnation of the blood-current, and it is not an easy thing to determine how much of the result may be due to pressure, and how much to mal-nutrition. That the latter is potent appears to me from the following considerations. In anæmia some, it may be a good deal of, œdema of the face and lower limbs is not rare, yet the blood-pressure must be very low. In morbus Brightii the capillary walls must surely participate in the general mal-nutrition, which is so apparent in the blood and in the tissues. Walshe states[2] that mitral regurgitation and aortic regurgitation may coexist for years, and yet no dropsy ensue. In such instances, which most of us have met with, it seems certain that undue backward pressure must have existed in the veins for a long time, yet dropsy did not ensue, probably because the capillaries were of better texture than usual. Between dropsical effusion into the areolar tissue or serous cavities and chronic flux from mucous surfaces there is evidently a considerable affinity. Now, it is certain that the latter does not depend on excessive intra-vascular pressure, so that it is probable that the former does not, at least invariably. Case 2 may be here referred to again. It was most striking in this instance how absence of dropsy coincided, to say the least, with a full cordy firm pulse and efficient action of the heart, while the return and increase of dropsy coincided with weakness of pulse and failure of cardiac energy. The above considerations, then, incline me strongly to the view that a languid blood-current in the capillaries dependent on arterial constriction is an important factor in the causation of dropsy, and may even, *per se*, conditionate it. If this be true, then it seems to be a necessary corollary that one indication in the therapy of dropsy is to invigorate and stimulate the failing heart, so that a fuller and livelier current may be sent through the arteries. It is evident that this is especially desirable for the sake of the kidneys, whose water-excreting function cannot be adequately performed if they are not supplied with briskly-moving blood. Renal inertia of course will seriously aggravate commencing dropsy.

CASE 4. *Anæmia; anasarca; temporary mitral murmur; urine not albuminous; tracing flat-topped; discs small and pale.*—G. M. R——, aged twenty, housemaid, admitted Nov. 4th, 1878. She was strong and well until she was fifteen; since then has been delicate. Two years ago she had an illness with pains in the joints, but does not know whether it was rheumatic fever. Since then her periods have been very irregular, with scanty flow. Her present illness began about seven weeks ago. Last week she felt bad pains in her back, and at the same time her face and feet swelled. Her mother died of dropsy after jaundice, her father after amputation of his arm. Has seven brothers and sisters all well. At present is very anæmic. Face markedly puffy, and lower limbs notably œdematous. Lungs appear fairly healthy; breath-sound not harsh. Heart beats in fourth space at and a little way outside vertical nipple line. At mid-sternum second sound well marked, also at second right cartilage. At xiphoid sounds pretty normal. At apex a systolic murmur heard a short way outside vertical nipple line. No reduplication of sounds. Dulness area extends abnormally to left, not to right. Pulse 88, not cordy, but pretty firm. Half a drachm of compound jalap powder every morning, ten minims solution of dialysed iron three times a day.—6th: In both eyes the disc is well seen, very pale; its margin well defined; the vessels are very small; the rest of the fundus is also very pale, but no hæmorrhages or white patches of albuminuric retinitis are visible. She can read rather small print. The radial tracing is markedly flat-topped, the rise low, the

dicrotism early. Urine very pale; total quantity 46 ounces, sp. gr. 1011; tested by heat or by nitric acid or by both it gives no indication of albumen.—11th: Face much less puffy. Feels better; bowels confined. Compound jalap powder, even in drachm-and-a-half doses, does not act; compound scammony powder, eight grains as occasion required, failed also; but castor oil did better.—20th: Seems to be doing well; face pallid still; apex beat felt at vertical nipple line in fifth space and a little outside, also in

[1] I had written the above before I read the remarkable case mentioned by Dr. Mahomed in his paper "On the Clinical Aspects of Chronic Bright's Disease," p. 56, Guy's Hospital Reports, vol. xxiv. I am staggered, but not yet convinced.

[2] Vide Diseases of the Heart, p. 303.

fourth space, but not at normal site. No murmur at apex; a slight one in course of pulmonary artery; second pulmonic sound markedly intensified. Discs small and white,

their margins very defined, their vessels very small; the choroid quite pale.—25th: Much headache; urine not albuminous.—Dec. 2nd: Urine pale, sp. gr. 1023, not albuminous; deposits a notable whity sediment consisting solely of scaly epithelium. Is pallid, but has no headache and no notable anasarca. The total urea on Nov. 28th by hydrobromate of soda process = 139 grains.—4th: Pulse to-day feels soft, as it has before, but gives a markedly flat-topped

tracing. Second sound is louder at second left cartilage than at right; no murmur at apex; prolonged first sound at mid-sternum.—9th: Up and dressed; says she feels quite well.

Although in this case there is a history of a disease, which was probably rheumatic fever, yet it is tolerably certain there was no primary disease of the heart. The apex murmur present on admission soon disappeared, and was most likely of functional character. There was some dilatation and hypertrophy of the left ventricle, which may reasonably be ascribed to backward blood-pressure depending on peripheral arterial obstruction. There was no indication of the existence of any renal disease, except that the specific gravity at first was low; the quantity of urine, however, then passed was good, and the density at a later date was pretty high. The discs were decidedly shrunken, and the retinal vessels contracted—a feature surely of great significance. It might, had it stood alone, have been regarded as a merely local change—the result of previous optic neuritis. But, considering the other features of the case, it seems much more probably to have been an expression of a general tendency to sclerosic change. The same may be said of the radial tracing, for in the absence of Bright's disease, and in early life, no other account can well be given why it should present that form which indicates positively a great increase of arterial tension. The hypothesis of arterio-capillary fibrosis, suggested by the existence of anasarca not dependent on cardiac or renal disease, is remarkably confirmed by the evidence of the ophthalmoscope and the sphygmograph—two perfectly independent witnesses. The anæmia was probably accidental, and belonged, together with the incomplete amenorrhœa, to her early period of life—a time when such failure of *vis vitæ* is notoriously rife. Another view may be taken—viz., that the anæmia was due to a blood-poisoning, analogous to that of morbus Brightii, and that this poisoning produced the excessive arterial tension and the optic-disc atrophy. I prefer the view taken above, as it deals less with hypothesis. Fibroid degeneration, as a general change, is now a well-established fact, and almost certainly was present in the discs of G. M. R——. The assumption of blood-poisoning, on the other hand, is a pure hypothesis, and not warranted by any special feature in the history.

The following conclusions I will ask you to receive provisionally, as the outcome of these cases. They contain little that is at all novel, but may aid to impress on your minds some modern views of the utmost practical importance:—

1. There exists a condition of the system more or less closely associated with Bright's disease, in which the blood suffers most serious impediment in passing from the arteries to the veins.

2. The causation of this impediment is not fully known. It may, perhaps, be different in different cases. In some it is certainly uræmic; in others it may be due to some as yet undemonstrated poison in the blood, as the good effects of purging and diaphoresis seem to indicate; and in others again it may depend upon a fibroid degeneration, or on premature senile change.

3. The effects of this impediment are manifested in the arteries becoming cordy and tortuous, and the heart dilated and hypertrophied. When the impediment is great, the power of the heart sooner or later fails; the pulse is no longer cordy, but remains full between the beats, and is very irregular and unequal, and yields a very small tracing. Attacks of syncope are prone to occur, and may prove fatal, even though the heart's muscle is of good structural quality.

4. In the above condition, dropsy is very apt to occur in the limbs and serous cavities. It is more likely to be absent as long as the pulse is firm and cordy, and the heart is acting well, and to supervene and attain large proportions when the reverse is the case. Bronchial catarrh and pulmonary œdema usually accompany the dropsy, induced by the backward pressure on the vessels of the lungs.

5. Albumen is apt to be present in the urine in these cases, but not rarely is quite absent, and the secretion is of good specific gravity and in tolerable quantity. This perhaps does not amount to a proof that the kidneys are sound. When albumen is present, it may, so to speak, be only a part of the dropsy, depending on mere escape of liquor sanguinis from the Malpighian tufts, without any serious lesion of the secreting tubes.

6. Treatment-indications are, to strengthen the heart, and to lessen the obstruction in the peripheral vessels. Ammonia, iron, and digitalis are valuable agents to accomplish the former; warm packs, hot-air baths, jaborandi, nitro-glycerine, and especially purging, may do more or less to fulfil the latter. But we have need of great caution, lest, in our endeavours to relax the vessels, we paralyse the overworked heart. When the heart is not too weak, prolonged exercise in the open air in warm weather, and preferably in a warm climate, may prove the best vascular relaxant.

HOW TO OBVIATE THE RISKS OF FAILURE IN OPERATIONS FOR CATARACT.

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IN former years—from 1745 till 1860—the extraction of an opaque lens from the eye was effected by a method which was regarded as the classic operation for cataract. It was introduced by Daviel, and consisted in making a semicircular incision in the cornea at its margin, and removing the lens through the pupil. Although this was considered as the only operation worthy of being employed for the restoration of sight, yet there was a general feeling afloat with regard to it, that its immediate and subsequent risks were too considerable. When an incision involving half the circumference of the cornea is made, and pressure exerted upon the eyeball, the lens, instead of coming out, may sink into the vitreous; or the nucleus may come through, leaving behind the contracted pupil, a mass of cortical substance and capsule, which it is impossible to remove, and which may give rise to subsequent mischief. Again, even if the whole of the lens substance is got rid of, the extent of the incision necessitates a considerable period for cicatrisation, and during all that time the absolute immobility of the patient is requisite; a fit of coughing or sneezing may burst the wound and destroy the eye; or during the slow cicatrisation the iris may be insinuated between the lips of the wound, and render useless the best executed work. The existence of the feeling that these and other contingencies, utterly beyond the control of the surgeon, rendered that brilliant operation rather hazardous, is evidenced by the eagerness with which Waldau's spoon operation was received. The spoon, however, proved to be a clumsy contrivance, and was abandoned, to be speedily followed by a host of innovations in other directions. On the almost general abandonment of the old operation there ensued a period of anarchy, or rather a veritable republic, in which every man was his own authority, and operated on cataract according to his own ideas. And this state of matters I consider not at all to be regretted, but rather necessary for the building up of a new system, free from dogmatism, by means of contributions from many fellow-workers.

Of all the new procedures, however, none has attained

such a position as that introduced by von Graefe in 1865, under the name of "modified linear extraction," in which he substituted a small linear incision for the flap. It seems to me that if this method had not been so violently attacked by Professor de Hassner on its first appearance, Graefe, instead of adhering strictly to the "maximum of linearity," would have enlarged the extent of the corneal incision, approximating to the form which I have been in the habit of using. Be this as it may, it is very natural that any operation associated with his name should command a high respect, as he is undoubtedly the central figure among modern ophthalmologists. The results of his method, however, in the hands of eminent German operators like Arlt, Otto Becker (of Heidelberg), Knapp, and others, have proved unsatisfactory, for it is alleged to have introduced a new chapter of accidents, such as sympathetic ophthalmia, through invagination of the iris, a thing little known in Daviel's operation. Hence it has been so variously modified by von Graefe's own pupils and followers that Warlomont's prediction has been almost literally fulfilled, that "of Graefe's operation for cataract nothing but the knife would remain."

In 1868 I published in THE LANCET some papers on this subject, giving the results of 107 operations. I have since then tried to improve upon that method, profiting not only from the experience of my own practice, but also from the close observation and personal inspection of the work of eminent operators in this country and on the continent. At the present time the chaotic condition of the literature of cataract must occasion great perplexity to anyone who is not thoroughly conversant with this subject. I therefore think that instead of discussing venerable names, it will be more profitable to consider the scientific data, on which the principles which guide us in our procedure should be based.

When we look at the tissues concerned, we are struck with the fact that when fairly dealt with they are very favourable to a successful result, and we have further the advantage that we do not work in the dark, so that cataract operations, though the most delicate, are among the safest of the important operations of surgery, if we only consider the risks and study how to avoid them.

What are the risks attending an operation for cataract?

1st.—As regards the cornea, any rough usage or laceration during the exit of the lens, or neglect to remove shreds of capsule or of hyaloid membrane, &c., from between the lips of the wound, may be followed by suppuration and sloughing. On the other hand, the cornea enjoys great immunity from taking on inflammatory action. Fifteen years ago I operated on an old lady, upwards of seventy, by Daviel's method. The corneal wound healed as well as I could wish, and the case went on to my perfect satisfaction, though I noticed at the time that all the tissues were in a state of senile marasmus; indeed, a fortnight after the patient went home, this condition made its appearance in the shape of gangrene of the toe, and she ultimately succumbed to it. This case impressed me very strongly with the great vitality of the cornea, and my subsequent labours at transplantation have only confirmed me in the conviction that, with fair treatment, we have little to fear from the cornea in an operation for cataract.

2nd.—The Iris. Any bruising or tearing of this membrane during the operation, or its subsequent prolapse from the coughing or restlessness of the patient, may bring on iritis and total destruction of the eye.

3rd.—The vitreous runs risk of being lost either before or during the opening of the capsule, or in attempting to remove the lens.

4th.—The lens may sink into the vitreous, or it may bruise the iris, or lacerate the cornea in its exit. But the most frequent source of danger is the retention of cortical débris, which may give rise to iritis, extending to the deep structures, and ending in panophthalmitis and collapse. Indeed, so thoroughly am I impressed with the fact that most eyes, whose destruction is charitably ascribed to cold, restlessness, &c., are really lost from this cause, that I have laid it down as a principle in my criticism of De Wecker's operation[1], that, "whenever inordinate pressure is used for the accouchement of the lens, we are never sure that the operation is accomplished." It may be finished as far as the surgeon is concerned, but a few days afterwards, generally about the fourth, the existence of débris will betray itself by nocturnal supraorbital pain, choroiditis, &c., ending in partial or complete failure.

Every step of the operation should be planned so as to avoid these complications[2], but as the parts concerned vary in size, consistence, and firmness, no dogmatic rule can be laid down to answer every case, and the only safety lies in adapting the incision and directing every step of the operation to meet the circumstances of each case.

1. The corneal incision should be regulated according to the size and consistence of the lens, so as to allow of its free and entire evacuation by soft, gentle pressure, and at the same time to secure perfect coaptation of the flaps.

2. The iridectomy should be so formed as not to allow any margin of the iris to be insinuated into the wound; and

3. Prolapse of the vitreous should be carefully guarded against at every step of the operation.

In accordance with these principles, in cases of infantile cataract, I very rarely leave the lens to be got rid of by absorption, considering that a good many eyes are lost through the irritation caused by the lens substance acting on the iris and other structures. Generally, after opening the capsule widely, and leaving the lens to be softened in the aqueous humour, I remove it three or four days afterwards by puncture with a broad needle, which is introduced obliquely through the corneal substance, so that upon its withdrawal complete coaptation is preserved, rendering hernia iridis impossible. Having been an opponent of the introduction of pumping instruments into the cornea for soft cataract operations when first recommended to the profession, I am gratified to see that several surgeons of eminence, who, led by high authority, then advocated that system, have, after experiencing disasters, come to my way of thinking. A soft or softish lens can easily be got rid of, expeditiously and safely, by means of the broad needle, aided by the fixation forceps at the vertical meridian of the eye on the opposite side. But when the lens is of a firmer consistence, the aspiration will drag upon the vitreous and other delicate structures, and is sure to do mischief without making an impression upon the lens substance.

In cases of senile cataract, I make an iridectomy generally downwards, from two to three weeks prior to extraction. In a case of urgency there need only be an interval of a few days between the iridectomy and extraction, as the two incisions do not interfere with each other. The section of the iris is made subconjunctivally, with a lance of the size shown in Fig. 1. Should the iris not prolapse on the withdrawal of the instrument, it is drawn out with Tyrrell's hook, and its internal circular border is laid hold of with a small pair of iris forceps, and rounded off with scissors, in such a way as to imitate the natural pupil and leave the ciliary border untouched.

FIGS. 1 & 2.

Fig. 1 shows the size of the lance.
Fig. 2, the corneal knife used to divide the bridge.

In the operation for extraction, the patient being in a recumbent position, I introduce a speculum and fix the eyeball by means of forceps tipped with gutta-percha, and with Graefe's knife I enter the external margin of the cornea close to its sclerotic junction; the counter-puncture is made directly opposite on the inner side, the points being so chosen that the corneal flap extends a millimetre more than the third of its circumference. The knife is then pushed in a plane parallel to the iris. When the corneal section is nearly completed I withdraw the knife. In cases of soft vitreous I open the capsule widely with the point of the knife before withdrawing it. I then remove the speculum.

[1] Annales d'Oculistique, June, 1876. But although I objected to de Wecker's method of extracting the lens through a small incision, without iridectomy, because the prolapse of the iris can never be corrected by sweeping it back with a spatula, nor did I consider the application of eserine, or any other drug, sufficient to correct a faulty incision, yet I thought that the object of preserving the beauty of the pupil, and obtaining greater visual acuity, is worth aiming at, if we can attain it without risk to the patient. I have consequently commenced my pupil formation based upon that principle. That M. de Wecker agrees with the views I then expressed is evident from his most recent publication, Chirurgie Oculaire, 1879.

[2] It appears to me that the merit of every new procedure recommended to the profession may fairly be tested by the fulfilment of these conditions.

(2) With my thumb and index-finger serving the purpose of a speculum, I introduce the cystotome, and make sure that the capsule is properly opened; and in cases of soft vitreous, when the lens has a tendency to sink, I make gentle pressure upon the eyeball, and, using the cystotome as a crochet, I bring the lens forward and put it in a position facing the corneal wound. (3) I introduce a small blunt-pointed corneal knife with a convex edge (Fig. 2), which I direct obliquely to divide the corneal bridge. (4) After a few seconds of rest, I seize a fold of the upper eyelid between my fingers and depress the lower with my other thumb, and, directing the patient to look straight forward, I exercise pressure upon the lower part exactly in the vertical meridian facing the middle of the iris section, and, with the other fingers through the eyelid, I press upon the wound to make it gape, when the cataract advances to the corneal incision. Any débris remaining behind is easily extruded by gentle manipulation. (Fig. 3.)

FIG. 3.

Fig. 3 shows the position of the incision, and appearance of the pupil, in Daviel's, Graefe's, and the author's methods—A, in Daviel's; B, in Graefe's; C and D, in the author's. In C the dotted line shows the subconjunctival iridectomy puncture.

When the vitreous is soft I leave a larger corneal bridge, and instead of finishing the circle at the corneal margin, I carry it more forward into the corneal substance, so as to protect the vitreous from prolapsing. I avoid giving chloroform, and do not dilate the pupil previous to extraction, as then there is a risk of a part of the iris falling upon the knife.

The advantages I claim for this method of procedure are the following:—

1. The iridectomy is not looked upon as a separate operation, but merely a slight preparation, as the patient is only confined to bed for the afternoon.

2. We can shape the iris section with precision, so as to secure a nice appearance, which can only occasionally be accomplished after the cornea has been incised for the removal of the lens. (See Figs. 4 and 5.)

FIG. 4.

Appearance of an eye after the extraction of a lens, done last year, when the extent of the iridectomy was still considerable.

FIG. 5.

Appearance of the pupil in an operation done just recently, after we commenced to restrict the extent of the iris section.

3. We secure the same acuity of vision as when the pupil is intact.

4. The edges are rounded off in such a manner as to prevent them being invaginated in the wound, and giving rise to sympathetic ophthalmia, which has been laid to the charge of Graefe's operation.

5. We escape having the process of extraction obscured by the bleeding, which is inevitable when the iridectomy immediately precedes the extraction.

These are not abstract speculations, but really dangers to be guarded against. Many a time when witnessing operations performed by surgeons who occupy a high position in our art, I have seen, after iridectomy, the anterior chamber filled with blood which could not be got rid of, and the lens extracted in the dark, part of it coming away, the remainder making a mass with the coagulated blood. At other times again, when pressure was made upon the eyeball with the curette, the nucleus was squeezed out, but a mass of cortical substance remained behind, which would not yield to pressure; the issue of such cases could hardly be doubted.

In cases of traumatic cataract my procedure depends entirely upon the nature of the injury. When the lens is *in situ*, I make an iridectomy at some distance from the corneal laceration, if there be any, and extract the lens at a subsequent period. When the lens has been dislocated forwards, I remove it without interfering with the integrity of the pupil, unless the iris has been hurt, when I take the precaution to remove the injured portion. When the lens is dislocated backwards into the vitreous humour, and is opaque, the patient being seated on a chair and the head inclined forwards, I introduce a needle through the sclerotic, and bring the lens forward into the anterior chamber. I then entrust the needle to an assistant, and remove the lens through a small corneal incision, without interfering with the iris.

Without entering into statistics, which might be the subject of cavilling, I may state generally that the results of the operations performed in the Glasgow Ophthalmic Institution, in presence of numerous students and medical practitioners, who see the cases daily afterwards, have been highly satisfactory; and though they include cases of unripe cataract, fluid vitreous, and other local and constitutional complications, the loss of an eye is such a rare occurrence that, unless in a combination of untoward complications, we never calculate upon its possibility.

In venturing to recommend the advantages of this operation to the profession, I need hardly say that the operative procedure must be adapted to the varying conditions of each case; but the leading principles here enunciated, when strictly followed out, I consider a safeguard against the risks which render cataract operations precarious.

Glasgow.

CASE OF ABSENCE OF URINARY BLADDER; LYMPHADENOMA OF KIDNEY.[1]

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THE female subject, E. S——, aged fifty-three years, from whom this specimen was taken was seen for the first time by Dr. Holden in the early part of 1871, and at intervals since. Her history (which I have had great difficulty in obtaining) is briefly this:—Throughout the whole of her illness the most prominent symptoms were severe pain in the back and lower part of abdomen; frequent micturition; urine was very albuminous, and under the microscope was found to contain pus and blood-cells, the pus being in greater abundance; tube-casts were never detected, though often looked for; delicate membranous shreds were occasionally found, but their anatomical or pathological identity was never fully established. Before finally placing herself under the care of the above-mentioned gentleman, she had consulted many medical men, who seem to have taken various views of the nature of her illness. She had been treated for "stone in the bladder," and on one occasion, when asked by her friends to seek the advice of an eminent physician in one of our great cities, the diagnosis pronounced was "villous cancer of the bladder," a diagnosis doubtless dependent on the detection by the finger of a hard tumour in the situation of the base of the bladder, and the presence

[1] A paper read before the Preston Medical Society (specimen exhibited).

in the urine of blood, pus, and the membranous shreds already mentioned.

Two days after the death of the patient I made a post-mortem examination at the request of Dr. Holden, the examination being limited to the abdomen. As mere details of pathological lesions are generally uninteresting, I shall try to avoid minutiæ as much as possible, and introduce here a summary taken from my notes made at the time of examination.

Post-mortem appearances.—The body was very much emaciated; the subcutaneous and omental fat had completely disappeared. The left kidney was very much enlarged, weighing about fourteen ounces; its cortical substance, which at places was very ill-defined, was occupied with cheesy masses, which varied in size from a pea to a fourpenny-piece. These caseous masses were of various consistence; some were soft and purulent, others were composed of thick pus and chalk-like particles; in the centre of some of them small irregular calculi were found, and these, judging from the surroundings, were more to be considered as calcareous degenerations of inflammatory products than calculi of a truly renal origin. I should have mentioned that when the kidney was cut into about a tablespoonful of pus escaped, the greater part of which seemed to have come from a large cavity situated in the cortical substance chiefly, and bounded by rough irregular walls. The cavity in question was sufficient to contain a walnut. At other places the cortical substance seemed pale and was occupied by a greyish-white exudation. These areas of exudation were of firm consistence. In addition to these morbid appearances the left kidney presented some well-marked congenital deformities. At its very imperfect hilus there entered only the renal artery. From the superior extremity of the viscus there ran a vessel which could be traced amid adhesions over the front of the abdominal aorta to its connexion with the inferior vena cava. It was the renal vein. Instead of the ureter emerging from the hilus, it arose from the inferior extremity of the kidney, and although it was somewhat constricted about half an inch from the organ, it could not be said to have any well-marked dilatation comparable to a pelvis, in shape at least; it was more a tube which the infundibula formed than a horseshoe pelvis. The mucous membrane of this part presented a slight degree of slaty pigmentation. The ureter arising from this unusual source was much distended and was curled upon itself, bearing a very close resemblance to a coil of small intestine of a child. It was widely dilated, and admitted with ease my middle finger, but was capable of further distension. The lining membrane of the ureter seemed in a state of catarrhal inflammation, judging from the presence of a slimy secretion. The ureter could be traced with perfect ease into the bony pelvis, but here a very unusual abnormality existed. All trace of a bladder seemed gone. The ureter, which tapered as it descended, was traced down to its junction with a very short urethra, not more than an inch or an inch and a half from the meatus. A catheter passed by Dr. Holden reached the terminal portion of the urethra, which was just a little behind the entrance of the ureter, and was somewhat dilated. This little terminal pouch could never, even when fully distended, have contained a teaspoonful of urine. The ascending colon adhered pretty firmly to the tissues underneath. Through an accidental opening made in the retro-peritoneum pus was seen to exude; and on this opening being enlarged, the finger passed into a large cavity containing about a pint and a half of pus. In this cavity, which corresponded to the lumbar and iliac regions, the right kidney was found, bathed in pus. The finger detected a portion of bare bone on the body and transverse process of the first lumbar vertebra. The right kidney, on removal, was found to be of the size of a duck's egg; it was bereft of capsule, had a very unequal outline, presenting depressions as if portions had been scooped out, and on section all trace of renal tissue seemed to have disappeared. The pelvis of the kidney remained intact. Section of the organ revealed the presence of a structure which looked not unlike the grey substance of the cerebellum, for, from a central area of what appeared to be fibrous tissue, and which corresponded to the trunk of the "arbor vitæ," there passed off bands of tissue which encircled and bound together nodules of material, some of which resembled fat. At the imperfect hilus of this mass, which was now no longer a kidney, for all appearance of renal structure had gone, there entered a vessel—the renal artery,—whose walls were thickened and incorporated with the adherent adjacent tissues. The renal vein could not be traced. At the point of entrance of the renal artery there emerged a ureter, normal in length, and which could be traced down to its junction with the urethra at a point opposite to the entrance of the left ureter. The right ureter, however, was quite impervious; its calibre was completely obliterated, from being bound down amongst inflammatory adhesions, so that it resembled a fibrous cord. The large nerves coming from the lumbar plexus had become very much thickened in their course through this cavity of pus, in which we found the remains of the right kidney. Nearly all the glands lying in front of the spinal column, as well as those lying in the hilus of each kidney, were enlarged, and on section many of them were found to be cheesy. The uterus and ovaries were rather hyperæmic, and the ovarian veins were distended with blood. The cavity of the uterus was normal. The neck of the uterus adhered pretty firmly to the tissues immediately round about the terminal pouch of the urethra; in fact, all the tissues in this neighbourhood were pretty firmly matted together, and there was rather a profuseness of fat. The right ovary on section was found to be pultaceous. The liver was normal in size; on section, it was somewhat pale, and its vessels had thickened walls. The spleen was small and firm. The pancreas seemed normal. Gall-bladder distended with fluid bile.

The appearance of sections of the kidneys under the microscope was that observed in the lymphomata or lymphadenomata—viz., delicate fibrillæ in whose meshes are contained groups of lymphatic cells. Portions of the left kidney from the immediate neighbourhood of the small abscesses presented in a very marked degree the appearances observed in "suppurative nephritis"—an extreme cellular infiltration of the intertubular tissue, with the borders of the section occupied by the degenerated products of inflammation. The nerves which traversed the cavity of pus on the right side had their sheath very much thickened; and sections of the nerves stained with carmine, and examined under the microscope, had an appearance similar to that observed in cirrhosis of other organs—viz., a thickened sheath from which there passed off into the interior bands of fibrous tissue to surround and bind together groups of nerve-fibrils. As the nerve-fibrils did not seem degenerated or broken in their course by the enveloping fibrous tissue, I am of opinion that, unlike what takes place in cirrhosis, generally speaking, the thickened fibrous covering acted the part of a protecter from the influence of the pus.

Setting aside the pathological condition of both kidneys, we have now to inquire, Is this a case of congenital absence of the bladder; or, having once existed, has the bladder, as the result of a partial and afterwards complete obliteration of the right ureter, with destruction of the kidney, completely disappeared, so as to leave behind it no trace of a former existence? Hypertrophy of an organ is the physiological result of overwork and an increased supply of blood; and the converse of this axiom is equally true, that where an organ has no function to perform it becomes useless to the economy, shrivels up, and disappears, as is the fate of the thymus gland after birth. Again, the penalty that we pay for a long tenure of life is seen, in advancing age, in the degeneration of some important organ; or as chronic disease makes itself felt on a feeble frame, atrophic changes follow, and, as one result, we have heard of atrophy of such an important organ as even the stomach. But we never miss that organ from the economy; single organs never disappear.

In the case before us, abolition of function as a forerunner of decay cannot for one moment be entertained. No one will maintain, even in face of occlusion of one ureter and destruction of a kidney, that the bladder had much less work to do. It is a comfort to know that many of our internal organs are double, and that, in the event of one having, by disease or mischance, its functional activity arrested, its fellow, either by education or some natural arrangement, performs an additional share of labour. Additional work necessitates increased blood-supply, and this results in a hypertrophied organ, the sum total of whose work will almost, if not entirely, equal that done by its former self and its now disabled associate. In the case now under consideration, the right kidney was undoubtedly the first to become affected, and, as its tissue became changed into that of a lymphadenomatous tumour, its function would be relegated to the corresponding kidney; and this seemingly has taken place, for the left kidney is hypertrophied. If the remark which I have just made holds good, that the

work done by a hypertrophied organ nearly equals that done by two of smaller size, then the bladder must have received a sufficient quantity of urine still to have remained what it really should be—"a retention pouch,"—and, in face of that duty, could not easily have sunk into utter insignificance or absolute retirement. Destruction of the kidneys is not followed by disappearance of the bladder, for we know that where one kidney has for long been useless to the economy, so far as contribution is concerned, from impacted calculus in the ureter or pelvis, the supervention of hydronephrosis in the other kidney, though resulting in deficient elimination of urine, is not followed by any special changes in the bladder.

In the left kidney we have evidence of congenital deformity in the entrances and exits of vessels. The renal artery entered at the hilus; the renal vein issued from the superior extremity of the organ, and the ureter was connected with a peculiarly-shaped pelvis at the inferior extremity of the kidney. With this anomaly in the disposition of parts in the upper portion of the genito-urinary tract, with the evidence of congenital malformation in the shape of the kidney and its accessories, I think we are almost at liberty to state that the "development of a bladder has in some way or other been interfered with"; rather than having pre-existed, it has disappeared.

Supposing the case to be one of pre-existence and subsequent disappearance of the bladder, is the condition of the left ureter and kidney such as we would expect to find in such a probability? Is it possible, too, to have the left ureter alone dilating and taking on itself the function of a urinary bladder, while its neighbour at death presents, at one part at least, a normal calibre? So far as the right ureter is concerned, its calibre was only normal for a very short distance from the kidney. Lower down it was so firmly bound down amongst inflammatory adhesions as to be no longer a patent tube, so that whether in the earlier part of the patient's lifetime it complamented the function of the left ureter it is impossible to say; at death it was useless. What was formerly a patent tube was now only a fibrous cord. The interesting features reside entirely in the anatomical peculiarities in the left side of the body. Here we have a widely dilated ureter, like the coil of a child's small intestine, constricted above at a short distance from the left kidney, leaving that organ unaffected, and on tracing this ureter downwards we find that it tapers so that just before joining the urethra it is markedly narrowed. This terminal constriction must have served a beneficial end. A certain amount of natural or spasmodic contraction at this point would prevent a continual dribbling away of urine, and thus allow of more comfort to the patient. But in saying this I imply that this contraction of the ureter is natural, is congenital if you will, put there to serve a good end, and that this had been accomplished, for if this state of matters had been of short duration the same end would not have been served. Constriction of the ureter causes accumulation of fluid behind that point, and the fluid in its accumulation exerts a deteriorating influence on the structures lying further back. When the ureter is obstructed, either by pressure from without or when the cause of obstruction is a calculus within, we have a hydronephrosis established, of the existence of which in this case, or even the tendency thereto, there is not the slightest evidence. The condition of hydronephrosis would, I think, have been established had the upper constriction near the kidney not existed, or—and this is more to the point—had the bladder disappeared. This disease has not been developed, because nature from the beginning had suited herself to existing conditions, the left ureter acting, it is true, somewhat imperfectly, but still fairly, the part of a bladder.

This case is not unique. Cases of absence of the bladder have already been published, but they are rare. In the article "Bladder," in Todd's Cyclopædia of Anatomy and Physiology, to which my attention has been very kindly drawn by Professor Allen Thomson, a few cases of the absence of this organ are recorded, in some of which the ureters either terminated in the urethra or were inserted into the rectum, while in others they communicated with the vagina. Of the first species the following are examples:—"Lieutaud mentions the case of a man, aged thirty-five, in whom the ureters, the capacity of which was much augmented, terminated immediately below the pubis, near the orifice of the urethra. Binninger describes the case of Abraham Clef, in whom there was no urinary bladder, and the ureters opened into the urethra." Of the second species "we have in the seventh volume of the Philosophical Transactions the history given by Richardson of a lad who lived to the age of seventeen without ever having passed urine by the urethra, and who had still enjoyed good health. The only inconvenience he suffered was a consequence of the passage of the urine into the rectum, by which a troublesome diarrhœa was kept up. Camper speaks of five similar cases, one of which was a female. Klein also speaks of a case. Of the third species cases are cited by Haller and Schrader." There is also a case mentioned by Phillips of a female fœtus in which the ureters opened through the abdominal parietes on each side of the pubic region in the form of little pouches.

CASE OF POISONING BY THREE DRACHMS OF PRUSSIC ACID; OPHTHALMOSCOPIC SIGNS OF DEATH.

BY A. B. KELLY, L.R.C.P. ED., M.R.C.S. ENG.

THE following case of poisoning by prussic acid will, I think, be of interest on account of the large dose which was taken and the length of time which elapsed before it proved fatal.

At 6.10 P.M. on Oct. 18th I left the house. A page-boy, aged sixteen, was standing in the hall, apparently well. At 6.30 precisely I returned, and, while in my consulting room with a patient, heard a noise of heavy breathing. I directed inquiries to be made as to the cause of this. At 6.35 I was informed by one of the maid-servants, who had got up on a chair and looked over a partition which divided the lad's bedroom from the hall, that he was pale and foaming at the mouth. I immediately got over the partition and opened the door from within, the latch being one which from the outside opened only with a key. I found him on his back on the bed. He was perfectly insensible; very livid; there was mucus without blood about his mouth; his eyes were open and glassy, and the pupils dilated. The respiration was hurried and stertorous. There were no convulsions; although these are generally a result in poisoning by prussic acid. There was no involuntary passage of fæces or of urine. The pulse was full and rapid at first, but gradually became weaker. There was no vomiting. On the floor by the bedside stood a bottle with the stopper replaced. The lad had taken as much as three drachms. Cold affusion and artificial respiration were at once resorted to, and, with the kind assistance of Dr. Buzzard, who arrived shortly after I had entered the bed-room, a magneto-induced current was employed for upwards of a quarter of an hour.

The average dose proving fatal is forty minims of the B.P., though recovery has taken place after one drachm has been swallowed. Two to ten minutes is given as the average period of life after two drachms or more, but in this case the lad lived, I should think, some twenty minutes after the poison was taken.

The stertorous breathing observed in this case has not, I think, been hitherto recorded in poisoning by prussic acid. It must be observed that the boy had just had his tea prior to taking the poison. His family history indicated no hereditary insanity or epilepsy. His father and sister are living, and are both healthy. He had been under my observation for one year, and only during the last week of his life had I perceived anything strange about his habits. I have, however, since learnt that he had pointed a small pistol at his fellow-servants, and had actually discharged a bullet within range of one of them; also that he had placed his head in a jack-towel hanging from a door, which caused him to turn black in the face, and, when remonstrated with, he said, "Oh, it's all right; I'm only larking."

Remarkable facts in relation to the case are, first, the presence of stertorous breathing and absence of convulsions. Stertorous breathing would appear to be exceptional in cases of poisoning by prussic acid, and to indicate profound insensibility. In Palmer's poisoning case at Rugeley it was contended that the fact of the deceased having had stertorous breathing was a proof that he had died from apoplexy, and not, as was alleged, from prussic acid. Again, the fact that the lad replaced the stopper in the bottle, and put it on the floor, further indicates that insensibility and physical ex-

haustion could not have come on as rapidly as they usually do in these cases.

Dr. Buzzard has obliged me with the following note of his observations on the case.

"When I saw the patient, some fifteen minutes after the poison had been taken, he was lying on his back profoundly insensible, the eyes nearly closed, the pupils large and insensitive to light. The body was cool and moist, the muscular system relaxed and free from any convulsive twitchings, the mouth half open, showing the tongue of a dark-red colour. The lips were of a purplish tint, and the tips of the fingers livid. There was no pulsation at the wrist, nor could any action of the heart be perceived by auscultation. Dr. Kelly was applying artificial respiration, and when this was discontinued for a minute or two it was noticed that a spontaneous respiratory act took place, and was followed by another after an interval of some fifty or sixty seconds. Faradisation of the phrenic nerves was then employed, but without effect; and when several minutes had elapsed without the least trace of automatic respiration, it was concluded that life was extinct. As, however, there had been no sign whatever to mark the moment of transition, I was anxious to satisfy myself that further efforts would be unavailing, and, having an ophthalmoscope with me, I examined one of the eyes, with the following result. The usual brilliant red glow from the choroid was entirely wanting, and its place was occupied by a very pale violet-grey tint. The optic disc, of a dull grey-white tone, was very ill-defined. The retinal arteries could be discerned with the greatest difficulty as exceedingly narrow threads. The veins, on the other hand, were easily traced, but appeared to be unevenly and imperfectly charged with blood. The observation was somewhat obstructed by a peculiar broken-up-like condition of the media — whether of the cornea, lens, or vitreous, I could not determine—which gave one the idea of looking through cooked tapioca. Observations are not yet numerous enough to enable us to say that the ophthalmoscope is always to be absolutely relied upon as a test of death, but as in this instance circumstances combined to prove that life was extinct when the observation was made, a record of the conditions found may be of service."

Mount-street, Grosvenor-square.

CASE OF COMPLETE RIGOR MORTIS OF BOTH LEGS FOURTEEN HOURS BEFORE DEATH.

By ALFRED FINCH, M.R.C.S.,
LATELY HOUSE-PHYSICIAN TO GUY'S HOSPITAL.

ON Friday, Sept. 26th, 1879, I was called at 4 P.M. to see Mrs. G. A——, aged sixty-five, the widow of a clergyman, and a complete stranger to me. I was told that on attempting to come down stairs that morning she lost the power of motion in her legs, which had felt numb whilst dressing, and that for the last fortnight she had taken absolutely no food, though always sitting down to meals with her three daughters, but had drunk small quantities of lupulin, a non-alcoholic drink. During this period she had gone about as usual, going to church on the previous Sunday, and had refused to see any medical man. About a year ago she had gone without food in a similar manner for a week when suffering from some mental distress.

The patient was lying on her back in bed with her head propped up on pillows. She received me without opposition, and spoke cheerfully. In answer to questions she described herself as quite well, said she had not had any appetite lately, that her legs felt cold and numb when she got up in the morning, and afterwards gave way under her, but that now they did not feel cold.

On examination both lower extremities were stone cold as high as Poupart's ligament. There was no œdema. The skin was loose, but had lost its elasticity, so that on taking it between the fingers and pinching it into folds it retained some of them when relaxed. There was perfect muscular rigidity, and the knee could not be flexed with moderate force (the servant had noticed this first at 11 A.M.) No pulsation could be felt in either femorals. A pin thrust in was unnoticed and produced no reflex action. The surface of abdomen was warm, the boundary of sensation and warmth being sharply defined, at Poupart's ligament; both completely absent below, but distinct above. There was no loss of power or sensation in the upper extremities, but the fingers were cold and livid. The facial expression was somewhat cadaverous. The whole body was very fairly nourished. The heart-sounds were feeble and slow, pulse barely perceptible at wrist. The breath had a peculiar earthy smell; the tongue was dry and coated with a thin white fur.

She was removed at once to a room with a fire, heat applied externally, and mustard to chest, and after a slight attempt at refusal she swallowed half a pint of beef-tea and brandy. She was left at 5.30 P.M. with instructions that beef-tea and brandy should be given every hour, with a mixture of ether and ammonia. At 8 P.M. the patient had swallowed nearly a pint of beef-tea at intervals, but since 7 o'clock she had become drowsy and breathed more deeply. Her state was now one of semi-collapse, drowsy, and yet easily roused and able to answer questions; the pulse at wrist imperceptible; respiration rapid and noisy; and she was very restless, throwing her arms about a good deal. Sinapisms were applied to chest again, but she continued to become more collapsed.

At 9 P.M. Dr. Robert Finch saw her and tried the effect of placing the hands in very hot water. This roused her considerably, and made her cry out, but not intelligibly. There was evidently great hyperæsthesia of the hands, but cloths wrung out of almost boiling water and applied to the legs were unheeded. However, the good effect was not permanent; she became quite unconscious at 11.30 P.M., and died at 1.30 A.M. For about an hour before death the respiration was peculiar, that known as Cheyne-Stokes' respiration, at times noisy and rapid, then sinking low and feeble, and after a time becoming rapid and noisy again, and the various periods succeeding each other with regularity.

Necropsy, Sept. 30th.—Rigor mortis had disappeared. The attendant who performed the necessary offices told me that as early as two hours after death the body was quite free from rigor. The body was well nourished, the fat thick over chest and abdomen. On opening abdomen, the omentum and mesentery were thickly infiltrated with fat, and the appendices epiploïcæ particularly fatty. The stomach contained a small amount of green fluid; the small and large intestine were empty, except a little fæces in the rectum. The liver was small but healthy; the gall-bladder full of bile, but not distended; the spleen was small but healthy; the kidneys were healthy.—Heart: Extensive fatty deposit on the external surface; the walls of both ventricles were in a state of extreme fatty degeneration, very pale in colour and readily broken through by the finger. The degeneration extended from without inwards, the innermost fibres not being so extremely altered; and the columnæ carneæ and musculi papillares were apparently healthy. The valves were also healthy. The coronary arteries were extensively atheromatous and much obstructed by calcareous deposits. The ascending and transverse aorta were thickened and atheromatous; the descending aorta was very much changed and ulcerated in several places, and on the posterior wall, just above the bifurcation, there was a large ulcerated surface and calcareous plate. The iliac and femoral arteries were filled with coloured loose clots; their internal surface was smooth and healthy.

Remarks.—From the above facts I can come to no other conclusion than that the lower extremities of the patient had passed into a state of rigor mortis. The stone coldness of the affected parts, and the absence of any circulation, combined with the other appearances, notably the peculiar want of elasticity in the skin, exclude the possibility of spasm due to nervous origin. It appears to me that, owing to disease of the heart and aorta, and the fourteen days' starvation, possibly also to the presence of a calcareous plate at the bifurcation of the aorta, which in some degree must have obstructed the free passage of blood to the iliac arteries, the circulation became extremely feeble, and ceased entirely in the lower extremities several hours before the heart failed. I do not know of any parallel case on record, but Rossbach, in Virchow's *Archiv*, vol. xli., p. 558, has described a rigor mortis beginning during the last moments of life, and, as is well known, muscular action may pass occasionally directly and at once into cadaveric rigidity. If, however, we accept the usual explanation of rigor mortis—viz., that it is due to the coagulation of the myosin,

in consequence of the cessation of the afflux of blood, there is no reason why this should not occur in cases such as this, when the circulation is at a standstill, and the functions of the nervous system are in abeyance.

It is to be noted that rigor mortis attacks the skin, and causes cutis anserina; but in this case the skin was at any rate only partially affected, for it was quite flaccid, though unlike the normal skin. I may also mention, as a point of interest, that the case was one of acute starvation, without wasting.

Stainton Lodge, Blackheath, S.E.

CASE OF RABIES, WITH UNUSUAL FEATURES.

BY MARK H. H. VERNON, L.R.C.P. &c.

I THINK that the following case is of sufficient importance to deserve record.

I saw, on the night of May 23rd, a gamekeeper, aged twenty, a man of intemperate habits, about whom the following history was given me:—Some time at the end of February, or the beginning of March, while trying to separate three small terriers, which were quarrelling, he was bitten by one of them on the calf of the leg. He was wearing a leather gaiter, and the dog's teeth did little more than break the skin of his leg. The wound appears to have caused him no trouble or anxiety. He seems to have had some worry from other causes, and to have indulged freely in beer.

On May 19th he was returning home from work in company with a friend, and was suddenly taken in a "fit." The man in whose company he was states that the patient, without any warning, suddenly lay down on the ground, and began to kick and bite at everything around him, that he seemed at first to be choking, and began to "bark like a dog." Some water was given him in a metal cup, out of which he bit two pieces, and he could not swallow the water. He continued to kick and bite and struggle for rather more than an hour; he then became quiet again, and seemed in his usual state of health, and continued so until three days after, when he began to complain of violent toothache, from which he had never previously suffered, so far as I could learn. At about six o'clock on the evening of the same day, as he was going his rounds with one of his mates, he told his companion that he was going to get a drink at a pond close by. He did not return, and the other keeper on going to look for him found him partly in the water, making a hoarse grunting noise, biting at the rushes, and, as he phrased it, "fighting" the water. He pulled him out, on which the man drew a knife from his pocket, and seemed to wish to cut his throat. The knife was taken from him, and then he became very violent, kicking and biting at all who came near. When water was brought to him, he said that it burnt him, and he could not swallow it. The messenger who came for me told me that I was wanted to see a man gone mad with toothache. I saw the man nearly three hours after he was first seized. I found him lying on the ground, held by five or six men. His face was flushed, and had a terrified expression. Eyes bright and staring, with injected conjunctivæ; pupils equal and contracted. The angles of the mouth were retracted. There was no trismus, and no particular hardness about the muscles of the neck. He was constantly snapping at the air, and if a hand was placed near his mouth he tried to bite it. He kept hawking and spitting up frothy mucus. Breathing short and hurried; skin dry and tolerably cool; temperature could not be taken; pulse hard and wiry.

I had him put into a cart and taken home. This was a work of some difficulty; his struggles were so great that it required several men to hold him. As soon as he was in bed I gave him two drops of croton oil and injected half a grain of morphia subcutaneously. In a short time, although still apparently unconscious of all that was going on around him, he tried to say something which was construed into a request for water. He swallowed a little drop, and then a spasm seized him; he seemed to be choking, and again became very violent, hawking and spitting as before. In an hour and a half, as the morphia seemed to have had no effect whatever, I gave him a second hypodermic injection, not quite so large as before (about one-third of a grain). In three-quarters of an hour he was much more composed, and again tried to ask for water. The effect was the same as before, but did not last so long. When he became quiet again, I left him, giving careful directions to his attendants to keep him perfectly undisturbed if possible.

I saw him early the next morning, and found him quite unconscious and in a moribund condition. I was told that he slept for two hours and a half after I left him; that he then woke up and said he knew he was going to die. He recognised all his relations and talked to them quietly. After a time he asked for water; this was brought him; he swallowed a little, but it then seemed to choke him. He became violent again—biting, hawking, and spitting as before. After struggling for an hour or two, he seemed to become exhausted. He died fourteen hours after the second seizure, and four days and a half after the first. There was no autopsy.

There can be no doubt that this case was one of rabies, and I think there are several noteworthy points in it:—1. The dog was not mad, and, up to the time of the man's death, had shown no signs of madness; it was only angry. 2. The bite was inflicted through a thick gaiter, thus minimising the chances of inoculation. 3. If the patient's friends are to be relied on, at least three clear days elapsed between the first and second seizures. Making all allowances for vivid imaginations and inexact recollections, yet the fragments of a pewter cup remain to show that the man must have been in an unusual frame of mind when he made use of the cup.

Horsham.

ACCUMULATION OF CERUMEN SIMULATING CHRONIC BRONCHITIS.

BY J. RUDD LEESON, M.B.,
LATE DEMONSTRATOR OF ANATOMY, ST. THOMAS'S HOSPITAL.

MRS. V—— had suffered at intervals of from three to five years from several attacks of acute and subacute bronchitis, from which she recovered, her lungs being left fairly free from physical signs, but which slowly then increased, much to her distress, and defied all treatment. She had a violent morning cough, lasting oftentimes nearly an hour, and terminating with vomiting about half a teaspoonful of glairy mucus. So severe was this morning cough that she dreaded rising, having generally to rest several times during dressing, from exhaustion. The bowels and bladder were relieved almost involuntarily. All sorts of plans, schemes, and medicines were tried, but without success, and I abandoned her case as being a hopeless one of chronic bronchitis.

For about two years she had suffered from increasing deafness, and had almost lost hearing on one side. Lately she began to complain of the good ear becoming affected, and one morning I was called to see her on account of almost complete deafness. On examination, both ears were filled with inspissated cerumen, which, after much syringing and soaking with oil, was removed, and her hearing was completely restored. From that day she has entirely lost her cough and sickness, and appears indeed to be quite another woman. Now this is a most interesting fact, and I venture to bring it before the notice of the medical profession, hoping that perhaps other cases of so-called "chronic bronchitis" may be cured with like rapidity.

Accumulation of cerumen in the ears and chronic bronchitis both chiefly affect those advanced in life. It may be that a connexion between the two as cause and effect has hitherto been overlooked. However, in any case of prolonged and troublesome cough which resists the ordinary remedies, I should advise a careful examination to be made with a speculum of the external auditory canal, it being almost needless to say that a considerable accumulation of wax may exist without damaging the hearing to any marked extent.

The explanation of the case is now easy: the cough was simply a reflex one. All aural surgeons are familiar with the fact that foreign bodies in the ear are frequently attended with a dry cough. Physiologists also know that coughing can be excited by tickling the auditory canal. In this case the stimulus seems to have travelled down the

vagus, stopping for some half hour or more at the pulmonary plexuses, and then following the pneumogastric through the diaphragm to the stomach, causing in the first place a flow of mucus, and secondly vomiting.

The anatomy is more difficult. The auricular branch of the pneumogastric nerve supplies, so far as is at present known, the skin *on the back* of the ear, whilst the skin of the external auditory canal is supplied by the auriculo-temporal branch from the third division of the fifth, this being proved not only by dissection, but also, as Mr. Hilton points out in his lectures on Rest and Pain, "by the frequency of earache accompanying toothache and malignant disease of the tongue, and by stiffness of the jaws (the muscles of mastication being supplied by motor branches from the third division of the fifth) accompanying earache, &c.

Now, I am not aware that anatomists describe any communication between the two nerves in question—viz., the auricular branch of the pneumogastric and the auriculo-temporal of the fifth, but I think this case goes a long way to prove that communications between them really do exist, and if so almost certainly at their peripheral distribution. At any rate, the facts are most interesting, and have an important practical bearing, which ought not to be overlooked.

Twickenham.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. BARTHOLOMEW'S HOSPITAL.

THREE CASES OF CHRONIC MENINGITIS, FOLLOWING INJURY TO THE SKULL.

(Under the care of Dr. SOUTHEY.)

THE following is the second case of the interesting series we began last week (page 796).

CASE 2. *Fall on the back of the head, followed four months after by cerebral symptoms; death.* — John A——, aged sixteen, a fairly nourished, but pale, lymphatic lad, with a vacant, half-imbecile expression, was taken to the hospital by his mother on July 10th last. He cried and sobbed in a frightened, child-like manner, and seemed intellectually degraded. His skin felt hot, dry, and desquamating; his tongue was moist and a little furred; pulse 108, regular, and small; respiration about 20. The temperature would be normal or below normal in the morning, but suddenly rise to 102° between 2 and 8 P.M. He walked upstairs, but stood like a person weak in his knees, and with his legs somewhat wide apart. He required help to undress himself, but not because of any special paralysis. The only muscle in which any impairment of power could be discovered was the external rectus of the left eye. After he was in bed he assumed the crouching attitude, lying habitually on his left side, with his knees drawn up and his hands between his thighs, as if always feeling cold.

The physical examination of the heart, lungs, and abdominal organs elicited no facts indicative of disease.

The patient had enjoyed perfect health, and intellectually had been equal to boys of his own age, up to Christmas last (1878-79), when, while sliding on the ice, he had fallen down and struck the back of his head heavily, suffering some concussion of the brain, and was laid up in bed at home for a week after the accident. He resumed his employment, however, and was able to do his work as well as before his fall up to May 1st. About this date he had a bad attack of vomiting, and since that vomiting the lad seemed to his mother to have lost all his wits, became dreamy and apathetic, and able to remember nothing properly. From May to July, the date of his admission, he lay at home in bed most of the day, vomiting frequently, but still keeping a good deal of his food down. Latterly he had troubled his family very much at night-time, waking up, screaming violently, keeping everyone awake about him, sobbing like a naughty child, and refusing to be comforted or quieted. By day he was drowsy, apathetic, slow in responding to questions, but possessed of ordinary discernment; while at night he was restless, terrified, and irrational. His bowels were inclined to be costive. He had no particular thirst, and he passed an average of three pints of urine per diem, of sp. gr. 1020, containing no albumen, and showing no noticeable excess of earthy phosphates.

He was ordered tepid baths, with occasional cold spinal douches; a wet rag to his forehead when his temperature was high; a grain of calomel, followed by a saline, when the bowels had been confined for forty-eight hours; a nourishing diet, but no stimulant.

Observations in the hospital entirely confirmed the account received about him. On some nights he slept pretty quietly, on others he would scream and sob and disturb the ward. He behaved like a great baby at all times, but was clean in his habits. He did not complain of much pain in his head, or appear to suffer headache, but he often asked to have his head chopped off, and was at times possessed with the idea that it was desired to chop it off.

He took very little solid food, plenty of milk and fluids; as a natural consequence, he passed large quantities of urine, 70 to 115 ounces sometimes per diem. Scybala accumulated in his colon, and required clearing out artificially once. He only vomited once or twice in July; entertained a variety of delusions; thought his bed was inhabited first by rats, then by eels, and that various animals, elephants, visited him. A restless noisy night was, however, often succeeded by vomiting on the following day.

On August 6th a careful ophthalmoscope examination was made by Mr. B. Vernon, who reported the right optic disc extremely red; left disc red, in parts ill defined; retinal veins engorged.

About the end of August no more delusions were heard of. The temperature-chart was carefully kept from July 10th to Aug. 14th. For three days in succession the temperature would be maintained between 101·5° and 104°, then it would drop to normal or below (97·2°) for two days, and then rise again gradually each night one or two degrees until it reached 104·8°, or, as it did on one occasion, 105°. Latterly he complained more of headache; the temperature fluctuated less, and was seldom above 102° or below 99°; he became weaker muscularly; his tongue was tremulous, and although he could sit up in bed the effort to do so brought on intense pain in the head and vomiting. Tâches cérébrales were well-marked.

Counter-irritation was applied over the occiput, and iodide of potassium was given internally, and chloral hydrate and bromide of potassium occasionally. In September recourse was had to hypodermics of morphia, with great relief to pain and vomiting. On Sept. 15th it was determined to put a seton in the back of the neck. The first attempt was made with a silk thread, which was soon pulled out again. Two days later he was anæsthetised with chloroform, and a proper seton was introduced. He had scarcely recovered from the effects of the chloroform, four hours only having intervened, when he had the first of a series of epileptic fits, recurring at short intervals until death on the same evening. Death occurred ten weeks after his admission, or about twenty weeks after the manifestation of the first cerebral symptoms, and over nine months after the receipt of an injury to the head.

Necropsy.—The scalp and calvaria were healthy. There were many tough adhesions at the fork of the optic commissure, and a layer of lymph on the surface of the olfactory nerves and the adjacent cerebral hemispheres. The convolutions were flattened on both sides, and the whole base of the brain was covered with tough, but not thick, deposits of lymph. The sides of both Sylvian fissures were adherent, and the cerebral hemispheres were adherent in front. The fourth ventricle was closed by adhesions, and in each lateral ventricle three or four ounces of clear serum were found. The iter was closed, but seemed not quite impervious on dissection. The brain-substance was healthy; there was no tubercle anywhere. The spinal cord and membranes were also healthy. There was no tubercle or evidence of disease in the lungs or bronchial glands. The heart and the abdominal viscera were likewise free from evidences of disease.

TUNBRIDGE WELLS INFIRMARY.

CASE OF MEMBRANOUS LARYNGITIS; TRACHEOTOMY; RECOVERY.

(Under the care of Mr. RIX.)

FOR the following notes we are indebted to Mr. John Footner, F.R.C.S., house-surgeon.

E. D——, aged five years, was admitted May 13th, 1879, suffering from stridulous dyspnœa and sore-throat, with a moderate amount of fever.

Her sister had been taken ill with similar symptoms two days previously, and died the second day of the disease. On admission, the patient was seen to be a rosy-cheeked child, very healthy-looking and well nourished. Her pharynx and palate were congested, and tonsils much enlarged. There was no trace of false membrane anywhere visible. Respiration was performed with difficulty, stridulous, and much accelerated, 48 per minute. Pulse 168; temperature 100° Fahr. There was no cyanosis. She was placed in a room the air of which was moistened and warmed by steam to a temperature ranging from 70° to 76° Fahr., which was maintained throughout her illness.

Mr. Rix ordered half a grain of calomel to be taken every four hours, and also a mixture containing antimony and ipecacuanha. No improvement in the patient's state took place, and on the following day, as the dyspnœa had become very urgent, and she was much cyanosed, chloroform was administered, and tracheotomy above the isthmus of the thyroid body was performed by Mr. Rix, and a silver tube introduced. Immediately after the operation the dyspnœa was greatly relieved, and the cyanosis gradually disappeared. A good deal of mucus was expelled through the tube just after the operation, but no trace of any false membrane. Patient passed a fairly quiet night, but coughed up a good deal of mucus through tube. Next day the respiration was much quieter than before, but still it was much accelerated, 34 per minute. She took liquid nourishment well. Antimony discontinued.

On the 17th she coughed up some small pieces of tough leathery false membrane through tube. Cough rather frequent. Lung sounds clear. Small pieces of false membrane were coughed up during the two following days.

On the 18th the calomel was ordered to be given every eight hours, and on the 21st it was discontinued. The wound round tube looked sloughy and very unhealthy. The child could not swallow perfectly; on attempting to swallow some milk most of it regurgitated through tube and anterior nares. Respiration still very quick, 44 per minute. The lung sounds were perfectly healthy. She had rapidly become pale and emaciated.

On the 22nd the tube was removed in the morning, but it was found necessary to replace it at night owing to increased dyspnœa. While the tube was out the dysphagia still remained, although the aperture in the neck was closed by the finger during deglutition.

On the 24th a small quantity of albumen (1 in 7) appeared in the urine. The temperature, which up to this time had fluctuated between 101° and 102° F., sank to 100°; respiration 30 per minute. The patient was allowed a boiled egg and bread and butter, which she swallowed well.

On the 26th temperature was normal, and the patient was much better. The urine still contained a trace of albumen. Deglutition was performed more easily, and rapidly improved after this date.

On the 29th the tube was removed. From this time the patient began to regain her health and strength. The steam was gradually dispensed with, and she was allowed solid food.

On Jan. 7th she got up and was removed into a large ward amongst the other patients.

Her convalescence was retarded by a mild attack of tonsillitis and bronchitis, which subsided under appropriate treatment.

She was discharged from the infirmary cured on July 7th.

Remarks.—This case presents most of the symptoms of diphtheria—a disease from which, as is well known, tracheotomy does not, as a rule, afford much hope of recovery. The persistent high temperature, ranging from 101° to 102° during a period of thirteen days; the presence of albumen in the urine, though only during a short period of four days, and the dysphagia; the rapid change from a fat, rosy-looking child to a pale and emaciated one (very probably caused by the calomel); the fact of her sister having been taken ill two days previously with similar symptoms, and the rapidly fatal termination; the expulsion of pieces of false membrane through the tube—all point to diphtheria; but it must be added that there was no enlargement of the glands at angle of jaw, nor was any false membrane visible *in situ*. Tracheotomy was performed early in this case, which, perhaps, may have contributed a good deal towards the patient's recovery.

ABERDEEN ROYAL INFIRMARY.

CASE OF NASO-PHARYNGEAL POLYPI; ECRASEMENT AND OSTEO-PLASTIC OPERATION; RAPID RECOVERY.

(Under the care of Dr. J. C. OGILVIE WILL.)

J. B——, aged seventeen, a fisherman, was admitted on May 4th, 1878, suffering from nasal polypus. The patient stated that about two years and a half ago he fell among rocks, receiving a severe blow upon his nose, which caused great hæmorrhage, and was followed by considerable swelling. Six months afterwards he began to experience difficulty in breathing, and suffered from other symptoms of nasal occlusion. The symptoms increasing, and frequent attacks of bleeding supervening, he consulted a medical man, who injected astringent solutions, and extracted a small polypus. Some time afterwards he was advised to seek admission to the infirmary, and when he did so the following symptoms were noted—namely, nose much deformed, flattened, and broadened, presenting the appearance of frog-face; right nostril completely blocked up by a tumour which was visible through the anterior nares; the soft palate was depressed and much displaced forwards by a hard, firm swelling; deglutition difficult; speech indistinct; breathing during sleep laboured and stertorous; sense of smell impaired.

Attempts to determine the points of attachment of the polypi were attended with great difficulty, on account of the lad's nervousness, and after the endeavour which was made to obtain the required information, he made preparations for returning home, and was only prevented from fulfilling his intention by the promise that he should be subjected to no further examination, so that the only information which it was possible to obtain was that the tumour seen through the anterior nares was attached to the floor of the nasal fossa, and the probability of the polypus being a branched one, consisting of two portions springing from a single stem, one passing forward and the other backward, seemed to both Dr. Will and his colleagues to be the most probable state of the parts.

On May 7th the wire-rope of an écraseur was passed through the anterior nares into the pharynx, and appeared in the throat, *not* between the tumour and the posterior wall of the pharynx, as it was concluded that it would do from the view that had been taken of the point of attachment of the polypus, but in front of the tumour, or between it and the velum, which indicated that there was opposition to the passage of the wire-loop behind, and that the pharyngeal portion of the morbid growth sprang from the base of the skull, and not from the floor of the nasal fossa. This was verified by the next step of the procedure, which consisted in passing the loop attached to the écraseur over the tumour, and then making slight traction on the handle of the instrument, when it was evident that the neck of the tumour was encircled by the wire. The wire was then gradually tightened in the ordinary manner, and in the course of a few moments a polypus the size of a large walnut was removed from the mouth, and the écraseur was then withdrawn. It was now evident that the polypus, which had projected behind and had been removed, was perfectly distinct and separate from the tumour seen through the anterior nares, for it was still *in situ*. Dr. Will therefore now passed his forefinger into the nostril, and found that it was filled with a large hard tumour, having the attachment to the floor, which he had previously ascertained. He made an endeavour to enucleate it by means of his finger-nail, but the area of attachment was so broad, and the adhesions were so firm, that his efforts were fruitless.

A consultation with Drs. Ogston and Garden was then held, when it was determined to cut through and turn aside the right superior maxillary bone along with the overlying

soft parts, in order to gain access to the point of origin of the growth. The bone and soft parts were accordingly detached after the manner of Langenbeck, and free access being thus afforded to the point of attachment of the mass, it was readily extirpated by avulsion and the free use of curved scissors. The bone was then replaced, and the soft parts were united by sutures. Hæmorrhage, which was excessive during the operation, was restrained by the application of catgut ligatures to the vessels as they were cut, and by the insertion of a plug of lint into the nostril; no dressings were applied. The polypus thus removed was irregular in shape, somewhat flattened, and about the size of a small tomato. Professor Stirling examined it, and reported that its structure was that of an ordinary œdematous fibrous tumour, with retentive cysts due to obstructed mucous glands. At 4 P.M. the patient was sensible, but exhausted; pulse extremely feeble. No chloroform sickness. Ordered a teaspoonful of brandy every two hours, and ice to suck.—8 P.M.: Had slept a little; did not complain of pain. Pulse stronger, 132; temperature 100·3°. To have an injection of morphia if required.

May 10th.—9 A.M.: Had passed a quiet night without hypodermic injection. No complaint of pain, but stated to nurse that he was already much relieved by the operation, as breathing was so much easier, although the plugs of lint were still in the nostril. Pulse 116; temperature 100°.

11th.—Morning: Passed a somewhat restless night. Parts swollen, and right eye completely closed from œdema. Pulse 113; temperature 101°. Evening: Swelling much lessened. Union of cut parts complete; all the sutures removed. Pulse 108; temperature 101·1°.

From this date everything went well, the swelling steadily disappearing, the pulse improving in strength and decreasing in frequency, the temperature, which never reached a higher point than 101·2°, speedily becoming normal, and the patient's general condition undergoing so rapid an improvement that on May 18th he was allowed to leave bed, and on the 23rd he was able to go out of doors. For some weeks there was a free discharge of pus from the nostril, which was frequently washed out with an antiseptic solution. One small point in the upper line of incision gave way, and remained open for a considerable period after his return home, but, on the extrusion of a small plate of bone, it speedily healed. On June 8th the lad left hospital in the enjoyment of perfect health, the wound, with the exception of the small point above-mentioned, being soundly healed, while the maxillary bone was firm and immovable.

Six months afterwards, when he presented himself at the hospital, he stated that he could breathe with equal ease through either nostril, and careful examination of the parts previously affected by disease failed to reveal the presence of any morbid appearances, while his face, although disfigured by linear cicatrices, was a not unpleasant-looking one, and bore but comparatively slight evidences of the very severe procedure which had been put in force.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

The Osseous Lesions of Hereditary Syphilis.—Primary Cancer of the Gall-bladder.—Cancer of Brain secondary to Breast.—Enchondroma of the Arm.

THE ordinary meeting of this Society was held on the 2nd inst., Mr. Hutchinson, President, in the chair. The subject of bone lesions in inherited syphilis was chiefly under discussion, specimens being shown in illustration by Drs. Moore and Barlow and Mr. Parker.

Dr. NORMAN MOORE showed a Calvaria from a case of Inherited Syphilis. The case was that of a female child seven years old, who died of tubercular meningitis at St. Bartholomew's Hospital under Dr. Gee's care. The calvaria showed general roughening and thickening, chiefly in parietal regions, but also in each side of the frontal and the upper part of the occipital bones, whilst a depression existed on each side of the coronal suture. The incisor teeth were deeply notched, but there was no other evidence of syphilis; nor was there any rickets. Strumous changes were also present, a caseous mass occurring in the cerebellum, whilst there were caseous bronchial glands and ulceration of ileo-cæcal valve. Two rounded cicatrices (syphilitic?) were met with in the anterior wall of the œsophagus. Whether the cranial changes were syphilitic or scrofulous Dr. Moore thought was open to question; he inclined to the former view. He also showed a skull from a child six years of age, under Dr. Andrew's care, who died from intestinal ulceration. There were caseous masses in the lungs and mesenteric glands. The incisor teeth were slightly notched, and there was some slight puckering about the anus. The interior of the skull was covered with worm-eaten patches, corresponding to villous growths on the dura mater. Was this syphilitic?—Dr. ALLEN STURGE had seen a similar wormeaten appearance of the inner table of the skull in a case where death ensued from hernia cerebri and abscess a month after a pistol-shot wound of the forehead. He attributed the condition in that case to partial detachment of the dura mater generally from the injury, such detachment severing the vascular connexion between the membrane and the skull, and leading to numerous points of caries.

Mr. PARKER showed specimens of Bones from a case of Congenital Syphilis—an infant seven weeks old, who at five weeks presented a fissured mouth, condylomata about anus, and dermatitis on nates and elsewhere. The mother had miscarried twice or thrice previously. The child died rapidly from marasmus, in spite of vigorous mercurial treatment, under which the bone changes diminished one half in bulk; there was no enlargement of liver or spleen. Mr. Parker remarked that he had had many cases of congenital bone disease, in all of which the change diminished under mercury. Of these four were fatal, and in none of those was the spleen enlarged. The calvaria in the present case was asymmetrical, and exhibited the condition described by Parrot as gelatiniform degeneration, eroded wormeaten patches existing on both sides of skull, and not at the seats of pressure, as in ordinary craniotabes. The change was obviously an ostitis, the periosteum being unaffected and readily separable. The humerus showed a deposit of new bone on the surface of the shaft, clearly independent of periosteal change, for the membrane could easily be detached, and showed no alteration. The tibia was similar, and the ulna showed like thickening in its upper part. Mr. Parker expressed a firm belief that if mercurial treatment were thoroughly pushed these osseous lesions could be materially diminished.

Dr. BARLOW exhibited several specimens showing the Osseous Lesions in Congenital Syphilis. He remarked upon the great variety of forms under which the lesions appeared. Mr. Parker's case differed wholly from that form in which the natiform variety of skull was produced; but it showed a loss of substance and conversion of bone into gelatinous material, a change sometimes proceeding to perforation. This form was most frequent in younger children; and he showed a specimen given him by M. Parrot, exhibiting this form in an early stage. Although craniotabes is common in syphilitic children, this change differs from craniotabes, where the process of absorption proceeds from the inside, as in a specimen he exhibited. M. Parrot had recently pointed out that three conditions were necessary for the production of craniotabes—namely, a soft skull (the syphilitic skull in early stages is pre-eminently soft), a feeble child, so that it lay with the back of its head pressing upon the cradle, and the pressure of the brain on the inner side of the skull. M. Parrot had met with truly congenital cases of craniotabes, where the change involved chiefly the part surrounding the fontanelle. Dr. Barlow also showed specimens of disease of long bones. In Mr. Parker's case the changes, whether periosteal or not, were on the outer surface of the diaphysis. There was also an endosteal variety, of which examples had been shown by Dr. Goodhart and Mr. Haward, where the end of the shaft is affected and the epiphysis displaced. This was not a disease of the epiphysis, but a change comparable to that of gelatiniform degeneration of the skull, affecting the ossifying layer at the end of long bones in the specimens he now showed—one, a femur, showed softening a little above the epiphysis; the other, a radius from another

case marked during life by pseudo-paralysis, exhibited the change at its lower end, displacing the epiphysis. He considered Dr. Moore's first specimen to be syphilitic, although it differed from the change described by Parrot, in involving the inner table as well as the outer. In syphilitic adults, cases of periostitis involving the inner table had been recorded. He doubted if the teeth in Dr. Moore's second case were characteristic of congenital syphilis.

Mr. HAWARD said that, although there might be great variety of changes, yet they might occur together in the same case. The case of "epiphysial" disease he had formerly brought forward showed also changes similar to those described by Dr. Barlow and Mr. Parker, for not only were the epiphyses separated, but the diaphyses were thickened. Mr. Macnamara had argued that the changes in the shaft were periosteal; but the periosteum peels off readily, and appears perfectly unchanged and natural, which would hardly be the case if it were the seat of ossific deposit. The disease at the extremities of the bones was not strictly epiphysial, although it led to detachment of the epiphysis. A striking clinical feature was the inability of the child to use the affected limbs. He agreed with Mr. Parker as to the value of mercurial treatment, thereby diminishing the number of cases which ended fatally. Although he had seen many cases, only one had died, and that was from bronchitis. Another point he had observed was that, in cases where osseous lesions predominated, the other symptoms of syphilis were not severe—e.g., in the case he showed there was intense hereditary syphilitic taint, and a sister of the child died with widespread visceral lesions.

Mr. PARKER exhibited a living specimen of Symmetrical Massive Nodes, probably due to congenital syphilis. The patient, a girl about fourteen years of age, whose parents were dead, was one of three children—one aged sixteen, and the other aged nine,—of whom neither appeared to present syphilitic characteristics. The present subject was very healthy; her teeth well-formed. She presented symmetrical hyperostoses in the lower jaw, the tibiæ, and the forearms, and one on the left clavicle. If due to congenital syphilis, the disease must have been long latent. She came to the hospital on account of the aching pain these "nodes" occasioned, and it was noteworthy that the pain was relieved, and some of the swellings (especially the clavicular) had diminished under the biniodide of mercury; but the mandibular masses had increased in size.

The PRESIDENT showed a specimen of the crown of a milk tooth, which was exfoliated in a syphilitic infant. Mr. Parker brought him the child suffering from inflammation of the gums in the middle line over the central incisor teeth. Two small abscesses had formed there, and on incision there escaped the crowns of two central incisors. Such cases as these helped to explain the fact that the deformity attacks the central incisors, and it bore out what he had shown to the Society several years ago as to inflammation of the sacs of the teeth giving rise to the malformation. He had lately met with a similar instance in another syphilitic infant. Mr. Hutchinson thought the teeth in both Dr. Moore's cases were syphilitic, those in the second case, although not very typical, were suggestive. Speaking of Mr. Parker's living specimen, he confessed that he had never seen a case in which there were so large and symmetrical nodes on the lower jaw. There could be no doubt, after seeing the condition of the humerus and tibia, that the condition was syphilitic. He had seen multiple periostitis develop late in hereditary syphilis. The explanation he gave of the occurrence of these late changes was that in infantile life most of the tissues are affected by the syphilitic poison, that a lull then took place, and after a longer or shorter interval another outbreak of the manifestations occurred, frequently in the same tissues and the same regions as those mainly attacked in infancy. As to size of nodes, he had seen one on the femur as large as two fists; and quite lately a patient was admitted into the London Hospital for spontaneous fracture of a femur whilst walking, the femur being universally thickened and enlarged to three or four times its normal size, whilst several other bones were the seat of nodes.—Dr. WILTSHIRE had found asymmetry to be almost the rule in infantile skulls, and the specimen which Dr. Barlow had shown from M. Parrot's collection showed very well what he took to be almost a physiological asymmetry. He had generally found this to consist in the advance of one frontal bone beyond the line of its fellow, and the backward development of the opposite occipital. Usually it was the right frontal that projected—viz., in about 60 per cent. of the cases. Of the rest many showed projection of the left frontals, whilst in a small percentage only was there perfect bilateral symmetry. The palate shared in the asymmetrical development. M. Budin, in his work on the Form of the Fœtal Head, states that in cases of fœtuses delivered by Cesarean section there is an asymmetrical projection of one frontal bone. Lasègue thinks that facial asymmetry is common to epileptics, but other French writers have shown the prevalence of asymmetry not only of the skull in adults, but of the brain also. Although syphilis may accentuate this asymmetry, yet it was essentially a normal condition. In reply to Dr. Lees, he said that the specimen (M. Parrot's) sent round was a moderately well marked example of this normal asymmetry.—Dr. LEES said, as a rule, the asymmetry in congenital syphilis was far more marked than this, owing to the extent of thickening; and, clinically, the recognition of marked asymmetry was important as pointing to syphilis. He believed M. Parrot held that all examples of craniotabes developed after birth were syphilitic, and in his own experience eight out of ten cases were indubitably syphilitic, the remaining two being probably so. Dr. Lees had seen a case of large nodes on both tibiæ, clavicles, and other bones, and smaller ones on the frontals, in a boy nine years of age. He was a thirteenth child, and the mother said he had no symptoms as an infant, and that when he was four or five months old he was suckled by a woman who had been a prostitute before marriage. This would be very interesting if a fact, but it was also stated by the medical man who showed the case to Dr. Lees that the mother had lost children from congenital syphilis.—Dr. MOORE asked whether the asymmetry of syphilitic skulls were not due to thickening of the bones. It was well known that all skulls are somewhat asymmetrical, and in some animals—e.g., Cetacea—this asymmetry is carried to an extreme degree.—Mr. EVE was at present dissecting a six months' fœtus—an abortion from a woman with syphilitic disease of the rectum. The long bones showed gelatiniform degeneration of the diaphysis, and in most there was detachment of epiphyses. One of the humeri presented a roughened surface and adherent periosteum, and from the tibia and fibula of one leg the periosteum had separated from the bones, which were thickened. It might be that retrograde changes followed the osseous thickening, and led to the periosteal detachment, for the surface of the tibia was carious. He had not yet examined them microscopically.—Dr. ORMEROD asked whether thickening of the parietals, with diminution of the fontanelles, was one form of syphilitic change, for he had met with this apart from any frontal thickening in syphilitic children.—Dr. BARLOW, in reply, said that he did not mean to imply that the different kinds of bone-lesion did not occur in the same subject. In one of the cases shown there were true periosteal nodes in addition to the other changes. In showing some crania last year he had emphasised the fact of the change not being periosteal; but at the same time he must admit that occasionally a periostitis does occur. He agreed with Mr. Haward, that in some of these cases of bone-lesion other parts escaped the syphilitic change; and he was not surprised that in Mr. Parker's case the spleen was not enlarged. He had met with a case where the bone lesion was the first manifestation of syphilis. It seemed, indeed, as if in syphilis there was a selective power, so that it attacked one set of tissues only in a given case. He considered Mr. Parker's case of massive nodes one of congenital syphilis. He had seen one case of a like kind, where although the history was defective, there was disseminated choroiditis. M. Parrot laid great stress upon asymmetry as a feature of syphilitic skulls; and seeing that such skulls are softer than the normal, they would be more likely to show asymmetry induced by pressure to an intensified degree.—Dr. MOORE, in reply, said that the teeth in his cases suggested syphilis to him at the autopsy, although they did not appear to be very characteristic.

Dr. NORMAN MOORE showed a specimen of Primary Cancer of the Gall-bladder. The specimen consisted of the pyloric end of the stomach, the first part of the duodenum, and the gall-bladder, the latter being infiltrated with medullary cancer, which was continuous with a mass of infiltrated lumbar glands which surrounded also the duodenum and pancreas. The common duct was pervious, the cystic duct occluded, and the gall-bladder contained four large calculi as well as several smaller ones. The patient was a woman, fifty-nine years of age, under Dr. Andrew's care. She said some swelling had existed for five years, but

her symptoms dated for about three months before death, which occurred from exhaustion due to vomiting. There were no nodules in the liver substance, but two small knots occurred on the surface of the organ near the gall-bladder. A remarkable feature was the enormous dilatation of the stomach, which reached to the pelvis. There was no evidence of this dilatation three weeks before her death. Dr. Moore suggested that the irritation of the calculi in the viscus might have originated the cancer, which undoubtedly was primary in the gall-bladder. The absence of jaundice was remarkable.—Dr. EWART had lately examined a case of cancer of the pancreas leading to obstructive jaundice. Several gall-stones were found in the gall-bladder and in the ducts, and he suggested that the growth had originated in the pancreas from irritation of the ducts by the calculi.

Dr. COUPLAND exhibited a specimen of Primary Cancer of the Gall-bladder. The tumour formed a firm white mass, the size of a cocoa-nut, in the anterior part of the right lobe of liver. In the centre of the growth was a small cavity full of calculi, evidently the remains of the sac. The growth was adherent to, and had invaded, the abdominal parietes and the first part of the duodenum, but the common bile-duct was not occluded, and there was no jaundice. There were no distal growths. Microscopical examination had not been completed. So far it seemed to belong to the epitheliomata. The subject was a married woman fifty-six years of age, who had borne twelve children, and had always enjoyed good health. She was admitted into the Middlesex Hospital on Aug. 29th, 1879, under Dr. Cayley's care, having suffered from epigastric pain, vomiting, and wasting for six months. A swelling in the hepatic region had existed for two months, and this, which was always firm, painful, and tender, slowly increased under observation. She died from exhaustion on Nov. 21st.

Mr. HULKE showed a recent specimen of Cancer of the Breast, with Secondary Cancer in the Liver and Brain. The patient was transferred to his care, on account of the mammary cancer, from a medical ward where she had been for some time with symptoms of brain tumour. She had also a large ovarian cystic tumour. Whilst under care she was very lethargic, but had severe paroxysms of headache; and there was marked double optic neuritis with retinal hæmorrhage. The left breast was the seat of a small shrunken scirrhous tumour, which during the last fortnight of her life had broken down and ulcerated at one point. After death the left cerebellar lobe was found to be the seat of a large mass of secondary cancer continuous with a nodule which adhered to the tentorium; whilst in the left inferior parietal lobule of the cerebrum was a smaller mass. There was also a secondary tumour in the liver. Mr. Hulke observed that out of all the cases of mammary cancer which had come under his notice, he had not seen more than three or four with secondary nodules in the brain.

Mr. CRIPPS showed a specimen of Enchondroma of the Arm, from a female twenty-eight years of age, under the care of Mr. T. Smith. The growth was one of seven years' duration, hard, nodular, and almost painless. Separate from it, and higher up in the arm, were four or five smaller masses. It was peculiar in consisting of a capsule filled with small mulberry-like cartilaginous masses, some attached to the capsular wall, others free. The nodules in the axilla, thought at first to be enlarged glands, proved to be separate masses of cartilage. The interest of the case lay in the occurrence of these detached masses. Those lying free within the capsular investment had probably at one time been attached to the rest of the tumour; whilst the outlying nodules were probably formed by conveyance of some cartilage cells from the main tumour into lymphatics, and their development at seats of arrest. Mr. De Morgan had recorded a somewhat analogous case.

Specimens without oral communication.

1. Two specimens of Aneurism at the Base of the Heart. By Dr. Ewart.
2. Myxo-sarcoma of the Head of the Tibia. By Mr. Walsham.
3. Cancer of Uterus, invading Bladder and Rectum, for which Colotomy was performed. By Mr. Hulke.
4. Cancer of Breast, with Secondary Nodule in the Liver, but without Lymphatic Glandular Infection. By Mr. Hulke.
5. Portrait of Infant with a Pedunculated Occipital Meningocele. By the President, for Dr. Ruddick, of Montreal.
6. Horse-shoe Kidney. By Dr. N. Moore.

CLINICAL SOCIETY OF LONDON.

Traumatic Aneurism of Scalp.—Excision of both Hip-joints for Symmetrical Femoral Necrosis.

THE ordinary meeting of this Society was held on the 28th ultimo; Dr. Greenhow, F.R.S., President, in the chair. The evening was in great part occupied by a discussion upon the nature and treatment of hip disease, arising out of a case of excision of both hip-joints, communicated by Mr. Croft. The operations were performed antiseptically, and the result was exceptionally favourable.

Dr. SANGSTER exhibited a case of Disturbed Nutrition, with Suppuration and Exfoliation of the Nails, probably of strumous origin.

Dr. ALLEN STURGE showed a case of Clonic Torticollis.

Mr. W. J. TYSON (Folkestone) read notes of a case of Traumatic Aneurism of the Scalp of twenty-two months' duration. The patient, a man aged fifty-six, in September, 1875, whilst out shooting, was struck by a stray shot on the back of the head, causing at the time considerable hæmorrhage. Sixteen months later there remained a hard and firm hemispherical swelling, the size of an ordinary walnut, without bruit or pulsation. It was situated between the right mastoid process and the occipital protuberance. Six months afterwards he again came to Mr. Tyson, the swelling having increased to the size of a small orange. Still no pulsation was to be felt or heard. Mr. Tyson made a horizontal incision across the tumour, and an accidental nick in the sac was followed by profuse hæmorrhage. The tumour was removed and firm pressure applied. The bleeding recurred next day, and the vessel was ligatured. During treatment the patient had a mild attack of delirium tremens. The wound was completely healed seven weeks after operation. Mr. Tyson remarked that the posterior auricular artery was probably injured by the shot, and gave rise to the false aneurism, which was remarkable for its long duration, attributable probably to the unyielding condition of the surrounding scalp. The skin was not thinned over it. The diagnosis was obscured by the absence of pulsation or bruit, and in the operation the bleeding vessel could not be reached until the old clot was removed, and whilst doing so other vessels in the scalp were divided. Had the patient consulted a medical man at first, the vessel would probably have been secured, and all further trouble avoided, whereas he certainly ran some risk of his life.—Mr. MARSH referred to Mr. Willett's case, in which there was so great an absence of aneurismal characters that it was taken for a sebaceous tumour by the house-surgeon. There was no bruit and no pulsation. The operation was accompanied by profuse hæmorrhage, and Mr. Willett laid open the sac and secured both ends of the occipital artery on which it was formed. Mr. Savory, a few years ago, dealt in the same way with a traumatic aneurism of the dorsal artery of the foot.—Mr. TYSON, in reply, said that his case also was first thought to be a sebaceous tumour, and some difficulty was experienced in dealing with it. The longest duration of a traumatic aneurism on record was a case by Mr. Spence. The aneurism had lasted for seven years, and had been produced by a spike-injury.

Mr. CROFT read notes of a case of Excision of both Hip-joints for Symmetrical Femoral Necrosis; operations antiseptic; result successful. The patient, a child four years of age, was admitted into St. Thomas's Hospital on Jan. 3rd, 1879. Two years previously she had fallen downstairs, and some months later began to limp and suffer from pain in hips and knees. For some time she was treated as an out-patient, but did not improve. She became thin and pale, and the cornea ulcerated; the thighs became flexed on pelvis, and legs on thighs; and in this state she was taken into hospital, when the limbs were straightened, and her health improved. At the end of February evidence of fluid in the left hip-joint was manifest, and some thick puriform fluid was evacuated by aspiration. The effusion re-collected, and on May 17th the left hip was excised antiseptically and subperiosteally. On June 17th the right hip was excised in the same way. The wounds healed in about five weeks from the time of operation. On each side there was extensive necrosis of the neck and head of the bone, the epiphysis being detached. There was also swelling of the synovial membrane. The case illustrated the value of early operation before the third stage is reached;

it showed also the security of antiseptics, the advantage of freely removing the diseased parts, and of leaving the muscles attached to the trochanter. The case was also interesting from its double and symmetrical character. Had not the operation been done early, the case would have gone on from bad to worse, the joints would have become anchylosed, and the chances of death from tuberculosis or amyloid disease would have been great. There was hardly any pyrexia after the operations, an important thing in cases of supposed tubercular disease. He largely attributed the good results to section of the femur through undiseased bone, and the destruction of the synovial membrane by chloride of zinc. The glutei were not detached from the trochanter, which has now renewed its attachment to the shaft, thus permitting of good movement and avoiding bony anchylosis. He had performed excision of the hip forty-five times; twenty-one were instances of necrosis of upper end of femur or of acetabulum. If the surgeon knows there to be dead bone in a joint, he is bound to remove it. He strongly condemned the practice of leaving these cases unexplored and unrelieved. Cases of a subacute or chronic kind, traceable to injury, probably depended on osteitis, and he would say that when there is fluid in such a joint, an incision should be made antiseptically and the joint explored. When uncertain as to the state of the bone, the surgeon should excise, and if he were sure that necrosis had occurred, he had no other alternative than excision. [The patient was then shown. She was a healthy-looking little girl, five years old. She could not yet balance herself well on the thighs. It was computed that there was about half an inch of shortening, but of course no comparative measurements could be taken. Mr. Croft also showed the modified Thomas's splint he used in the case.]—Mr. BRYANT said the case opened up the whole question of excision of the hip—as to the value of the procedure, the conditions calling for it, and also the pathology of joint disease. Clearly the case was one of osteitis, to which probably nine-tenths of the cases of hip disease in early life were due; whereas in adults the primary synovial form was more frequent. There could be no doubt as to the propriety of the operation, for whenever necrosis had taken place it should be the rule to operate early. But it could hardly be claimed that in this case the operation was done *very* early. The disease had arrived at a well-marked stage, and its course had been so marked and so rapid that no hesitation about operating could have occurred. He demurred to the operation being styled "subperiosteal." There was necrosis of the head of the femur, disorganisation of the capsule of the joint, and the neck of the bone was quite denuded, so that only the trochanter could strictly be held to have retained its periosteum. He felt at a loss to know what surgeons meant by a "subperiosteal" resection under these conditions. The object of excision was to remove the disease. A stiff joint, with anchylosis, would not be a satisfactory result. It might, indeed, be hardly right to try to save the periosteum, if it were possible, and for himself he had often tried, but always failed, to strip off the fibrous covering of the trochanter, and he had come to regard the "subperiosteal" section as a fanciful thing. It would be otherwise if dealing with a normal joint; then a subperiosteal section would be possible. But to remove a healthy head of the femur would be an error. Mr. Croft had urged that when the joint was found to be full of fluid it should be cut down on antiseptically, and if the joint were then found to be healthy the surgeon should go no further. But he (Mr. Bryant) maintained that the joint should not be so treated, but that measures to obtain the absorption of the fluid should be tried. If Mr. Croft meant that they should not cut down into a joint unless there was strong evidence of its containing pus, the question would be different. The bulk of cases being due to disease of bone, resection should follow the incision into the suppurating joint. He followed this practice himself in most cases, but sometimes, when it is doubtful whether there is necrosis, he does not proceed to resection. He would like, then, for some further explanation as to the meaning of an "early incision" in these cases. As to definite stages of the disease, he did not recognise them. A stage of disorganisation he knew, and a stage of open suppuration, but to speak of first, second, and third stages was unintelligible to him. The stage differs according to the cause of the disease—e.g., in acute necrosis it runs through its whole evolution in the course of a few days. As to resection of the hip, he was, as a rule, disappointed with its results. The cases of good result were very few as compared with a large class, in which a crippled limb, not fit for walking, was left; and the even larger class already doomed by the presence of visceral disease. It might be that surgeons were disposed to wait too long for Nature's processes, and thus cases came to excision too late, when lardaceous disease was already established, and this was a strong argument in favour of early interference. But *when* should the surgeon interfere? He was afraid that "antiseptic surgery" had induced surgeons to operate without necessity; an over-confidence in its safety disposed them to deal with joints too freely, and to resect joints which pathologically were curable. As a surgeon who had lived in the pre-antiseptic period, or rather before the introduction of the protecting spray, he could not help asking himself if some of the cases could not have got well had they been left to nature? He feared that Mr. Croft had fallen into the new system; and he could not but think that Nature was competent to absorb serum effused into a joint.—Mr. HULKE congratulated Mr. Croft on the brilliant result of his case, although he could not assent to his deductions. If there was one lesson to be gained from observation of these cases more than another, it was this—viz., the necessity of giving the joint complete and absolute rest from the time of the very earliest manifestation of disease. The present case was for some months treated as an out-patient, and during that time the joint could not have had that complete immobility so essential for its recovery. He had again and again seen joints suffer from the non-observance of this principle. He believed that disease of any joint in the body in childhood commenced as an osteitis almost invariably. As to operative interference, he would concede its being called for whenever the presence of necrosis extending into the joint could be established, but of that occurrence he knew of no strict indication. He agreed with Mr. Bryant on the question of opening joints when there was a presumption of fluid in them; and even when there was pus he had seen instances (both of knee and hip) where free incisions and thorough rest, as first pointed out by Mr. Gay, resulted in the retention of free mobility to the joint. He also felt with Mr. Bryant as to the general outcome of excisions of the hip-joint; but, of a large percentage of survivals, he knew of few where a useful limb resulted. For, if these cases were watched for a series of years (an observation falling less to the lot of the hospital surgeon than to that of the general practitioner), it would be found that so great a dwarfing of the limb resulted as to render it almost useless. On the other hand, it must be borne in mind that excision was done, not merely to save the limb, but to preserve life. He also felt strongly the cogency of Mr. Bryant's remarks upon "subperiosteal" resection. He had always followed the old rule, instilled into him by his German teachers, to keep as close to the diseased bone as he could, and he did not see how this were possible if periosteum were stripped off the healthy shaft in order to divide this at a point below the disease. He had listened to Dr. Sayre's advocacy of the subperiosteal method, without, however, satisfying himself that the operation described strictly embodied a preservation of periosteum. In conclusion, he thought that the joint in these cases should be very early and completely fixed, and in that way many acute and subacute cases would do well. He recalled one case of *peracute* inflammation, which subsided under these measures and the local application of ice. Early immobilisation, then, if practicable; but if the case were taken too late for this, and if, in spite of such immobility, fluid accumulated in the joint, and that, too, pus, free incisions and drainage should be resorted to. He had never seen anything but harm come of the use of the aspirator, for it invariably became plugged with flocculi of concrete pus in these cases. Then, if there be reason to believe that necrosis existed, there was no doubt whatever that the sooner excision was performed the better.—Mr. PARKER agreed with Mr. Hulke in congratulating Mr. Croft on his very successful case. It was so successful that there was nothing to which one could take exception as respected that particular case. He could not quite agree with Mr. Croft in regarding it as an early operation, for the child seemed to have been ill two years at least. Mr. Hulke advocated rest, but he (Mr. Parker) had been disappointed in the ultimate result of this plan of treatment. He had now under care in the East London Children's Hospital two or three cases which had continued to progress although complete rest had been given during two or three months, and in one of these cases disease in the other hip had

occurred spontaneously during this treatment by rest. Regarding the general question of treatment by operation, it was disappointing that Mr. Croft, out of his abundant material, had not given the Society the benefit of a critical analysis of his results and experience. It would, probably, have contained much useful information bearing on the diagnosis of the various forms of the disease, and to young surgeons such information would have been very valuable indeed. It was just his own difficulty to know when to operate and when not to operate. There was room for a better classification of the cases. Some tended, no doubt, ultimately to recover, while others just as certainly, in spite of all treatments, tended to progress, and it was very desirable to differentiate the cases in order to adopt the most appropriate treatment in each. Out of seven or eight excisions he had found in five instances the head of the bone loose as a sequestrum in the acetabulum [some of the bones were here shown]. It would be well if those who had large experience would give younger surgeons the benefit of it. Again, he thought that the methods of operation at present in use were not the best, and that a more surgical method might be adopted. By making an incision from the anterior superior spine downwards along the anterior border of the great trochanter, cutting between sartorius and rectus on the inside, and the anterior edges of the tensor and the two smaller glutei muscles on the outside, a patch of the anterior surface of the capsule would be exposed, and no muscular fibres would be cut across; the neck of the bone is to be sawn across *in situ*. This avoids the necessity of forcibly wrenching the femur out of its socket in order to saw off the diseased portion, a proceeding by which the periosteum was sometimes largely separated from the bone.—Mr. HULKE thought for Mr. Parker to have found, in five out of eight cases, the head of the bone as a sequestrum, was a singular experience.—Mr. BRYANT also thought it curious that so large a proportion of such cases should have fallen to Mr. Parker, and that they ought to be recorded. Out of some fifty cases, he had only seen three or four in which the head of the bone formed a sequestrum,—Mr. HUTCHINSON'S experience as to the rarity of detachment at the epiphysis was similar to that of Mr. Bryant and Mr. Hulke. He had only met with three or four such cases. Again, the condition he had most often found was one of caries rather than necrosis. He agreed with Mr. Bryant and Mr. Hulke as to a general feeling of disappointment at the issue of cases of hip-resection, and he had never been an enthusiast for the operation. He had seen a certain number of failures, and a certain number in which only partial success was obtained; whilst several of the cases, most successful as regards the limb, had died of lardaceous disease, and he agreed that this fact was an argument in favour of early operative interference. At the same time he was quite sure of the success frequently attending milder measures, as Mr. Hulke had shown. Complete rest by plaster-of-Paris bandage, and, if possible, sea-air, also greatly aided recovery. He felt sure that a far larger number of cases would be successfully treated if they could be transferred to the seaside instead of being kept in a London hospital. Counter-irritation was also very valuable, especially in cases where there was fluid effusion. Rest combined with counter-irritation often alone sufficed, and as a counter-irritant he would mention tincture of capsicum, the use of which he learned a long time ago from a practitioner who was little better than a charlatan. He also wished to congratulate Mr. Croft on the happy result of his case—one of the most successful he had seen.—Mr. H. MARSH pointed out that the chief interest lay in the question of the value of excision in hip disease, and he could not but agree with Mr. Hutchinson as to the disappointment often accruing from the operation. He had seen about 120 cases of excision, and thought it would be difficult to show six or seven which had turned out really well. Mr. Croft might reply that this was because the operations had been too long deferred, and that they were not performed antiseptically. It might be so, but so convinced was he of the general failure that it was with the greatest aversion he resorted to it. At St. Bartholomew's Hospital it was an operation now rarely performed. Wide conclusions should not be drawn from a single case. If one was fortunate enough to come across a case in which the head of the bone was detached so that it could be removed as a sequestrum, it did not require any division of bony tissue. He suggested that Mr. Croft should show the case again at a later period. He (Mr. Marsh) agreed with those who had said that necrosis was rare, and that caries was the prevailing condition, for in operating, as a rule, it is carious bone that is cut through, and in many cases he had seen operated on it would have been impossible to have got beyond the inflamed bone without dividing the shaft low down. He believed that early recourse to treatment by perfect rest and counter-irritation would be successful in the majority of cases. He could show many cases of hip-joint disease which had recovered, with fair mobility and walking power, after having been widely suppurating. It must be remembered that Mr. Croft's patient was now much in the condition of children who have congenital dislocation of the hips. He differed from Mr. Hulke in his opinion of the aspirator. By using a sufficiently large trocar he had frequently evacuated large accumulations of pus, with recovery.—Mr. CROFT, in reply, said that it had been his intention to have submitted an analysis of forty-five cases of excision of the hip to the Royal Medical and Chirurgical Society, and he had no intention of raising the general question upon the single case he had brought forward that night. In speaking of an early operation, he did not mean one undertaken in the early stage of the disease, before there was perceptible effusion. He fully recognised this incipient stage, and had been as successful as others in treating the disease when it came under his notice at that time. The case he had brought did not illustrate the treatment he should pursue in the very early stage. The accident which started the disease had occurred two years before the child's admission into hospital. The divisions adopted by Sayre and others were very useful clinical divisions, although they might not be pathologically accurate, any more than it was pathologically correct to speak of "primary," "secondary," and "tertiary" syphilis. Still it might be said that the first stage of hip disease was that which commenced with the onset of inflammatory signs and ended in effusion; the second, from effusion to the formation of open abscesses; and the third thence *ad finem*. His case, then, was in the second stage. He had confidence in antiseptics, for he held that a system by which a surgeon could extirpate a loose cartilage from the knee-joint, and send the patient out cured in ten days, was enough to inspire confidence; and under the protection afforded by this system the surgeon was fully justified in freely opening into a joint containing fluid. Probably he would find the fluid purulent, and evidences of pulpy degeneration and of necrosis; but if he did not no harm would ensue. He would indeed have relieved the symptoms, especially the symptom of *pain*. The term subperiosteal was the most convenient he had to describe what was done. He could demonstrate the possibility of tearing out the great trochanter and leaving the whole of the periosteum behind. Of course the term was not applicable to the head of the bone, but it was strictly so to the neck; and if the bone be turned out, leaving periosteum, the removal is subperiosteal. Antiseptic treatment must be complete, or it is nothing. The key to the disappointment expressed as to the general results of the operation was, that the operation was not performed early enough. His forty-five cases included four at present in hospital; fourteen sound and well; fifteen had died from one cause or another, two of them from pyæmia (but not since he had used antiseptics), one from diphtheria, and the rest from tuberculosis in one form or another. He did not know of any certain indications of necrosis, and he sometimes aspirated joints to confirm the diagnosis of purulent effusion. He thought aspiration for serous synovitis was often followed by a favourable result. He did not wish to draw wide deductions from one case; and he had already shown that his opinions were based on a larger experience. The child could not yet balance herself on the femora; but he anticipated that, as the periosteum had been left, new bone would form and a kind of joint be reproduced. He would be well satisfied if he had induced some surgeons to operate early in hip disease. — Mr. HULKE moved the adjournment of the discussion, in order to allow of further explanation from Mr. Croft upon the remarkable rate of mortality (15 out of 48) in his cases. But the PRESIDENT, pointing out the inconvenience of this course, suggested that the subject might be reopened by Mr. Parker giving details of his cases, which appeared to be unusual, at the next meeting; and that then, or subsequently, Mr. Croft might make another communication, and afford the Society an opportunity of discussing his cases. Mr. Bryant and Dr. Glover also making suggestions, it was decided to reopen the question rather than adjourn the debate.

THE LANCET.

LONDON: SATURDAY, DECEMBER 6, 1879.

WE print in another column the long-expected Royal Warrant for the regulation of the Army Medical Department. It is satisfactory to find that the result of so much deliberation has been the adoption of most of the changes suggested by Lord CRANBROOK'S Committee. Colonel STANLEY appears to have been anxious to put the Department on a satisfactory footing; and, although we cannot but regret the delay which has occurred, we must do him the justice to say that he has taken a liberal view of the requirements of the service.

The chief points in the new Warrant affecting the candidates are: the limitation of the age on admission to twenty-eight years; the power given to the Secretary of State to nominate, on the recommendation of the governing bodies of the recognised schools of medicine at home and in the colonies, as surgeons on probation, a number of qualified medical men not exceeding one-half of the vacancies in the department, the rest being filled up by competitive examination; the increase of pay of the probationers from 5*s.* to 8*s.* per diem, and the grant of the relative rank of lieutenant during the period of probation. As regards the officers, the most important changes are: the abolition of the ten-years' system; the permission to retire on a gratuity at any time between ten and twenty years' service, and on a permanent pension after that period; the creation of the grade of Brigade-Surgeon; the increase of full and retired pay to all ranks; the extension of the period of sick-leave on full pay from six to twelve months; the restoration of forage to Surgeons-Major; the permission to employ as servants men of the Army Hospital Corps, with the option of drawing the money allowance in lieu; the grant of staff allowances to medical officers attached to corps; permission to exchange when compatible with the interests of the service; the abolition of the restriction of the relative rank of Surgeon-Major to *junior* of the rank of Lieutenant-Colonel, and the grant of rank of Captain to the Surgeon on joining instead of after five years. The Warrant also lays down clearly the conditions of promotion to the various grades, so that in future there can be no unpleasant discussions as to unpublished requirements. The promotion to the rank of Surgeon-Major will take place after twelve years' full-pay service, but power is reserved to promote a surgeon for distinguished service irrespective of his standing, the grounds for his special promotion being published in the *Gazette*. Promotion to Brigade Surgeon is to be made by selection from Surgeon-Majors having at least eight years' foreign service; and from Brigade Surgeon to Deputy Surgeon-General also by selection, coupled with the condition that the officers must have served at least ten years abroad, including three in India. The suggestion of the Committee that a new title be given to the Army Medical Department does not appear to have been adopted, nor is anything said respecting the distribution of honours. But as the latter, we believe, has never formed part of a Warrant, we trust that they may in future be awarded in accordance with the principle recommended in the report of the Committee.

Taking an impartial review of the changes introduced, of the conditions of service, the rates of pay and retirement, and the status accorded to the medical officers, we are of opinion that the army presents an eligible opening, either as a temporary or a permanent career, to those of our young medical brethren who feel disposed for a somewhat roving life. The objection to it as a temporary career is now removed by the fact that it is optional to leave it, and that doing so cannot carry with it the imputation of inferiority or ineligibility. We shall watch with interest the manner in which the new regulations are carried out, but from the spirit displayed by Colonel STANLEY we believe that it will be done honourably, and with an earnest desire to benefit the army.

ACCORDING to the charter of the University of London, a vacancy on the Senate has to be filled up by Government selecting one out of a list of three nominees sent up by Convocation; and in accordance with an understanding hitherto acted upon by Convocation, the actual vacancy would be filled by a graduate in Arts, the last vacancy having been filled by a graduate in Medicine, Sir WILLIAM JENNER. But it does not follow that the nomination of a graduate in Arts is without interest for the graduates in Medicine. The present conjuncture, indeed, claims their earnest attention and prompt action. A considerable number of graduates in Arts and a few graduates in Medicine have signed a nomination paper in favour of Mr. WILLIAM SHAEN, M.A., and have issued a circular to the members of Convocation inviting their support. This gentleman has undoubted claims to consideration so far as taking an active part in the movement for obtaining the new charter by which the graduates were incorporated in Convocation, and subsequent work in that body as clerk—a paid office,—can constitute a claim. But this can hardly be an all-sufficient claim, and it is eminently desirable that the graduates, especially those in Science and Medicine, should weigh how far the position Mr. SHAEN holds in his own faculty of Arts, in Literature, and in Science is calculated to support his claim, and successfully to challenge public opinion. His fellow-graduates in Arts, we presume, are satisfied that Mr. SHAEN has achieved an academical reputation in and out of the University which is sufficiently respectable, and such eminence in his profession as to reflect back some of the lustre which an august representative body throws around those who join its ranks. The Senate counts, or has counted, several men who have adorned the Bench as well as the Legislature, and several men who have earned a respectable position at the Bar. Mr. SHAEN is the head of the firm of SHAEN and ROSCOE, solicitors. It may seem fitting that his branch of the profession should be represented; and to those who think so Mr. SHAEN may undoubtedly seem the fittest man to represent it. Upon this we have no opinion to offer. But a senator's duty is to represent the University, and the very essence of a university is the just combination of mathematics, literature, and science. Strictly speaking, in its fundamental nature it has nothing to do with professions. Its object is to promote

the cultivation of pure knowledge and science, leaving to its *alumni* to choose how they will apply their academical knowledge. Even the degrees in medicine are degrees in science rather than qualifications to practise; and not a few of the leading physicians and surgeons regard these degrees as something far more academical than as evidence of fitness to practise.

It comes, then, to this, that in nominating to the Senate it behoves every member of Convocation to support candidates who look to the University as a whole, who respect science as well as arts, who can challenge by their public work and position public respect. They should select men who have justified their pretensions to represent their University by having achieved very prominent positions outside the University, thus proving in their own persons that the possession of a London degree means the possession of talents and acquirements that will carry a man to the highest ranks of the career which he has chosen.

The medical graduates at large, we venture to say (and we do not except those who have signed Mr. SHAEN'S paper), are very much in the dark as to his views upon science. The circular is altogether silent as to the views which Mr. SHAEN holds upon homœopathy, vivisection, total abstinence, women-graduates, and other eccentric notions which involve nothing short of a negation of true science. The graduates in science have already had sufficient reason to complain of the scant respect shown to them in the discussion of questions in which their authority ought to have weight. Those gentlemen, then, who seek for their support on the present occasion may fairly be called upon to give satisfactory assurance as to their orthodoxy in the sciences.

THE list of deaths during the last two weeks has included the names of many old friends, and men of note have passed from among us. In another column we print the obituary notice of Mr. HARRY LEACH, formerly our esteemed coadjutor, and deeply regretted by all who knew him. Exposure to the cold foggy atmosphere of the Thames a few weeks back destroyed the hope cherished by his friends that a malady which had long threatened his existence might be cheated of its prey. It is a saddening reflection that a fall of temperature a few degrees involves the termination of lives illustrious and useful. So entirely is man the subject as well as the creature of circumstances. We doubt whether this matter of cold is sufficiently well recognised, and as an unusually hard winter is, perhaps, in store for us, it may not be amiss to call to mind the leading facts about animal heat and the measures by which its due maintenance is to be secured while waste is prevented.

It scarcely needs to be said that, except as an adjunct to the heat functions of the organism, the heat derived from external sources plays no vital part in the economy of existence. It is impossible to warm a dead body into life. As soon as vitality ceases in an organic structure, heat becomes an enemy to its cohesion. The practical use of external heat—setting aside that communicated by the rays of the sun, which may have properties with which we are only imperfectly acquainted—is to economise the heat generated by the body. Vital heat and vital force are convertible terms, although both may be misdirected so as to prove destructive rather than conservative of the life wherewith they are associated and which they express. The source of heat is life, and life without heat is impossible.

Speaking with sufficient accuracy, the human organism must be kept at an average temperature, equal to about 98·5° Fahr. in all climates, to be in health. Any considerable variation from that standard, in either direction, and though only to the extent of a few degrees, is inimical to vitality. It is, therefore, obvious how great must be the resisting power of the organism to external heat, in some surroundings, and to cold amid others. This power of isolation is located, doubtless, in the skin, with its vast apparatus for exudation, evaporation, and secretion. The skin loses its heat very rapidly, and, except under circumstances of special excitation, does not take up heat readily either from without or within. When the hands are "warmed" by exposure to the fire or friction, the sensation of heat is far in excess of the actual elevation of temperature. In short, the skin is a conductor of low power, and upon this, in a very marked degree, depends the faculty of heat-preservation. Although the surface may appear to be chilled by external cold, the underlying parts of the body are not, at first, necessarily lowered in temperature. How soon the effect of cold applied to the skin will be transmitted to the structures beneath it must depend principally on the vitality of the integument. If the skin be well developed, and possess the power to contract and maintain its tonicity, the resistance will be kept up sufficiently long to enable the organism, within, to accumulate heat for its maintenance at a natural temperature, so that when the skin relaxes, the surface will indicate by what we call a "glow" the establishment of a defensive state. If cold be again applied, either by a blast of cold air or the contact of wet clothing, the skin may again contract, and the process of heat-accumulation, with the local determination elicited by the stimulus to the nervous system, will probably be repeated; but, unless the skin happens to be structurally and functionally developed to an extent scarcely possible at any part of the surface which is habitually covered by clothing, there will rapidly come a time when the external cold will no longer cause healthy contraction and no reaction is likely to occur. When that moment arrives—and it may be very early in the case of weakly persons, or those who lead pampered lives and are in the habit of "wrapping up,"—the isolating properties of the integument will be exhausted, and either the body may be rapidly cooled or a special call will be made on the apparatus of internal heat, leading to a rate of production which will establish what we call fever.

This is, of course, a very one-sided account of what occurs when a surface chill takes place, but it will serve our immediate purpose, which is to draw attention pointedly to three facts: First, that the external temperature, whether high or low, is to be guarded *against* rather than taken into account in seeking to maintain the heat of the organism. Secondly, that the skin is an apparatus of isolation, in cold weather being braced up and tense, in warm weather relaxed, and acting freely as an agent for cooling the body by the continuous evaporation of insensible perspiration and special sweating after any unusual exertion. It is far more important to keep the skin healthy and vigorous than simply "warm." Therefore extreme cleanliness, such as can never

be secured without frequent washing with soap from head to foot, is indispensable to its vigorous action in winter, and upon this health in a very special degree depends. Thirdly, the heat generated within the body is the sole effective source of vital temperature, and thus heat is the product of chemico-physical changes which are associated with nutrition, and cannot be carried on without *food*. It is obvious on the face of the fact that food is more essential than raiment; and whatever is done to save the loss of heat to a surrounding atmosphere of low temperature, and objects greedy of caloric, the main and first concern should be to furnish the heat-producing apparatus in the organism with the nutrient fuel it requires. It is no longer the fashion to attach very high moment to the kind of food supplied for the purpose of nutrition, but the presence of a full proportion of what used to be called "combustible" elements in the food—fatty matters and the like—is undoubtedly important and economical as regards the utilisation of the more directly constituent elements of food for their nutrient purposes. Against one error it is especially desirable to guard the inexperienced—namely, the mistaking of "feeling" for fact. When a man takes a glass of spirit and water he *feels* warmed, but the sensation is the direct result of nerve-stimulation, which means nothing, and will do nothing in the way of heat. Unless food is taken with the alcohol there is no addition to the stock of nutrient-fuel. The spirit passes away, and leaves the organism colder instead of warmer for its exhibition, unless, as we have said, food be taken at the same time. The notion of keeping the "cold out" by a glass of warm spirits is wholly illusory. The effect produced, when the potion seems to do good, is nervous and mental. In so far as it acts at all, the stimulant must do harm by relaxing the skin, and leaving it more exposed to the debilitating action of external cold, and less likely to contract efficiently and put out its full powers as an insulating, and therefore heat-preserving, integument. In these three points lie the important considerations to bear in mind at the outset of a hard winter, when cold threatens us all, and especially the aged, with a lowered vitality, and organic difficulties caused by local congestions and embarrassment of function are peculiarly liable to bring almost sudden death in their train.

WE lately noticed the lamentable condition into which the Medical Department of the Navy has been allowed to fall, as much by errors of commission as of omission, until notwithstanding the closure of the army for a time to medical aspirants, and the most strenuous efforts at recruiting for the navy among those who would have gone to the army had it been open, the naval department has lain like a log on its proper element, simply maintaining its strength at a discount of sixty from its normal standard. Without a speedy reform there will be less hope of its resuscitation after the new army scheme is in operation, and probably there are some of its ill-used officers, present and past, who might think that the best of all reforms would be their entire dissociation from a long chain of naval prejudices by a direct consolidation in one medical department to superintend all the doctors of both army and navy. But as such may not be feasible, it is to be hoped that equal liberality—we would say equal measures of justice—will be dealt without delay to the navy, which otherwise we fear will by contrast soon get into a rut from which it will be almost impossible extricate it.

Whatever may be the concessions made by the Admiralty, we trust that, like the War Office, it will be advised of the unwisdom of tampering with great things, such as Warrants, in so far as they were intended to be beneficial to medical officers, and of attempting lesser matters that injure or give offence to influential officers. Not merely must the rates of pay, both full and retired, be raised to those of the army standards, but principles concerning them, which were pronounced equitable and requisite by the Admiralty Committee of 1866, embodied in the subsequent Order in Council, must still be adhered to in their integrity. It was then established that, in consideration of the loss of full-pay time inseparable from a service always fluctuating in its requirements, it was necessary to increase the active pay, and to add the value of time that it sacrificed, at the involuntary cost of the officers, to their emoluments on retirement.

There are two essential points on which there exists great difference between the rules of the two services:—First, as regards the retirement of officers who have not attained to administrative rank; the Brigade Surgeon is compulsorily retired at fifty-five years of age, whilst the Fleet Surgeon is retained on the active list till sixty years of age. We think that the army rule would be beneficial in the navy, where the seniors of three grades are now compulsorily retired at the age of sixty. Secondly, in the navy, promotion to the rank of Deputy Inspector-General and of Inspector-General is one of selection from among the senior Fleet Surgeons, whilst for the army it is now ordained, in Clause 19, that *all* promotions to the analogous ranks "shall be given for ability and merit, upon the selection of our Commander-in-Chief, with the approval of our Secretary of State." We think that, for the service, the army practice must have its advantages; but we are at a loss to see why the very name of the Director-General should be omitted from those of the selecting authorities. The present Army Warrant doubtless follows the usage of its predecessor, but we cannot think the omission satisfactory. The Director-General should clearly in all cases be responsible for and recommend the selection.

Lastly, in addition to these comparisons we must refer to an important point in the Navy Warrant of 1874, which we have already denounced as oppressive to the officers who were then compulsorily retired without that compensation for the loss of five years on the active list which the War Office made to its then disqualified officers. We are glad to find that the new Army Warrant has avoided this source of grievance; and we trust that by the coming Navy Warrant ample restitution will be made to all those officers on the principles laid down in the thirty-first clause of the new Order in Council for the future regulation of the army.

DR. GOWERS proposes to give, at the Medical Society of London on Monday next, some microscopical illustrations of the various forms of Disease of the Spinal Cord. The specimens will be on view in the meeting room of the Society, Chandos-street, Cavendish-square, W., at eight P.M. on the same evening.

Annotations.

"Ne quid nimis."

HEALTH OF THE QUEEN.

WE are glad to be able to state on authority that the recent satisfactory announcements as to the health of Her Majesty are trustworthy. The convalescence is making good progress.

SEA-WATER FOR LONDON.

IN 1872 an Act was procured for giving powers to a limited company to bring a supply of sea-water into the metropolis from Brighton by means of an aqueduct, which was to follow the course of the high road. Unfortunately for Londoners, the necessary funds were not then subscribed, but we are glad to find that the scheme has been resuscitated, and we wish its promoters every success. London is very badly off for baths, and we feel sure that spacious sea-water swimming baths would meet with a very large amount of patronage, provided the supply of water were thoroughly adequate. The value of sea-water baths, both hot and cold, is well recognised by physicians and surgeons, and it is at least probable that the addition of common salt to the ordinary hard water of London is in no way a substitute for real fresh sea-water. The new company might be sure of finding a large amount of custom among invalids and the members of the medical profession. Sea-water might be used also for watering the streets, and, indeed, its hygroscopic character would render it very efficient for such a purpose. Aquaria, both public and private, would be more easily managed if the water could be renewed with greater facility than at present is the case, while for flushing sewers and extinguishing fires, sea-water might be utilised, and thus lead to economy in the use of pure water, and render the supply of that article which is at present available sufficient, or nearly so, for the cooking, washing, and drinking needs of the whole of London.

INDIAN "SANITATION."

A WRITER in the *Pioneer*, using the signature of "Sceptic," raises a question which directly bears upon the observations we had occasion to make last week concerning the unsatisfactory nature of the data on which certain important conclusions relating to sanitary and etiological work in India rest, and upon Sir Joseph Fayrer's suggestion, made before the Epidemiological Society, for increased detail of research and more limited spheres of observation in India. He doubts the justness of the conclusions of the Sanitary Commissioner with the Government of India, and of the Army Sanitary Commission, as to the influence which sanitary measures, as ordinarily understood, have exercised on the great reduction of mortality among European soldiers in India. He points out that this great reduction is observed only in Bengal, that no corresponding reduction has been noted in Madras and in Bombay, and that the Bengal reduction has followed generally upon fundamental changes of administration involving the distribution of troops, the elimination of long-service men, the introduction of a larger proportion of men at the robuster periods of life, the sending home of the sickly, and so forth. He points out, moreover, that there are still old cantonments which, sanitary work notwithstanding, remain almost as unhealthy as ever, and that few cantonments are not liable to serious outbreaks of cholera and typhoid fever. The recurrence of such outbreaks in cantonments of European soldiers, he argues, is proof positive that we are not justified in claiming for our hygienic work in India such great benefits as is claimed by the chief sanitary official of the Government and by the Army Sanitary Commission. He avers, further, that until the actual influence of health-measures in India is ascertained in the same fashion as it has been ascertained in England—namely, by the detailed examination of particular places,—we shall not merely delude ourselves, but fail to rectify the particular unwholesome conditions upon which the local prevalence of cholera and typhoid depends. This writer supports his position with weighty evidence, and we are glad to note that he proposes to continue the subject with observations on the question why cholera and typhoid continue to slay so many victims in cantonments where "sanitary matters are attended to."

It is of excellent augury for India that the public press of that country should recognise the importance of discussing this subject from the point of view of "Sceptic." The *Pioneer* justifies its name in leading the way to the discrimination of what is sham, what reality, in Indian "sanitation."

FOGS.

THOSE who remember the orthodox, "London Fog" of forty years ago, can have only a modified idea of a "foggy" atmosphere by inhaling the fog of to-day. In the good old days before the "main-drainage system" and the purification of the Thames by enclosing that once too tardily retiring river—when its muddy banks were slowly left to give off pestilent and murky vapours—the London fog was an institution. Let those who have no practical knowledge of the genuine imitation rejoice in their ignorance. Nevertheless, the fog of to-day is a nuisance, and may be a source of injury to health. Whether or not it is the coating of bituminous coal received by the particles of vapour floating in the atmosphere, which irritates the air-passages, as alleged by Dr. Frankland, certainly fog is a serious, most grievous enemy to the delicate of lung or larynx. We suspect that without looking beyond the fact that vapour of the coldest and least respirable character is inhaled with the air we breathe in a fog, there is enough to account for the injury done to the delicate membrane of the air-passages. The effect must be much the same as if the unhappy mortal who tries to live in an atmosphere of fog were subjected to a perpetual administration of spray for some throat affection. The spray is not remedial or medicated, but simply a cold, damp, application persistently applied, and engendering disease by reducing the temperature of the lung surface to a point below that consistent with vitality.

EXCISION OF THE HIP.

THE case of double excision of the hip, shown at the Clinical Society on Friday last by Mr. Croft, led to a discussion of so much importance, and opened up so many questions of practical interest, that we are glad the whole subject is to be brought up again, when Mr. Croft will describe the results of his somewhat extensive experience of the operation, and will show some of his cases to the Society. It would be manifestly unfair and prejudicial to the true interests of surgery for us to comment on the very general statement of his results that Mr. Croft gave in his reply to the criticisms of Messrs. Bryant and Hulke. But the fact that out of forty-five cases of excision of the hip, nearly half of which are still under treatment, as many as fifteen have died, is so striking—we had almost said alarming—that we hope all surgeons who can give us trustworthy information on the subject will feel it their duty to do so at the coming discussion. As we have already said, we cannot discuss Mr. Croft's statistics now—we do not know all the facts,—but we must explain that he did not state that fifteen died *from* the operation, but *after* the operation. And what we require to know is, not how many patients leave our hospitals convalescent after excision of the hip, but how many

are ultimately cured by it; how many are delivered from death, or from the encumbrance of a useless limb, or the mutilation of amputation at the hip, by it. These facts cannot be got at by observation of single or a few cases, and in all circumstances are very difficult to collect. Let the older members of the profession, the senior surgeons of our hospitals, who have accumulated experience of the natural progress of the disease, who know the results of other methods of treatment, and who have practised excision, *and followed up their cases*, tell us what they know. The question has been raised in so startling a manner that it must not be allowed to rest until we have obtained all the evidence possible, which must be abundant if only accessible.

THE RUSSIAN SOCIETY OF PUBLIC HEALTH.

THE Russian Society of Public Health held its first meeting for the present session on the 18th ult., under the presidency of Dr. Zdekauer. The meeting had under consideration a subject submitted by the zemstvo of the Government of Taurida (which includes the Crimea), and which referred to the introduction into primary and secondary schools of instruction in hygiene. The discussion was opened by M. Andreïevsky, who dealt first with the general question whether hygiene should form a part of the ordinary course of instruction, then proceeded to consider whether Russia could supply at the present moment a sufficiency of instructors in hygiene, and of works adapted for instruction; and, lastly, he gave attention to the practicability of introducing hygienic teaching in classical gymnasia, professional schools, &c. M. Andreïevsky, in treating the first question, observed that hygiene, or the science of the cares to be given to the body, had been cultivated in remote antiquity, and had been the object of cultivation in many countries of the East, but that it had lost its importance on the introduction of Christian civilisation, and was only now beginning to recover the preponderance in social matters which of right belonged to it. With regard to the second question, he believed that no lack of teachers of hygiene would be experienced if the need for them were admitted. Already it had been found practicable to add instruction in hygiene to the course of tuition in several normal schools and seminaries. As to the third question, what France had done with respect to the teaching of hygiene in schools, under the programme adopted by the Minister of Education in 1872, might be accomplished in Russia, or serve at least as an incentive to efforts in promoting hygienic teaching. After a prolonged discussion the meeting passed a resolution in favour of the introduction of such teaching in normal schools.

MEASLES FATALITY IN PLYMOUTH.

ONCE more measles appears, from the Registrar-General's weekly returns, to threaten to become epidemic in Plymouth. During last week six fatal cases were recorded in one of the two registration sub-districts of the borough, showing a larger proportional fatality from the disease than prevailed in any other of the twenty large English towns. The fatality of measles in these towns has steadily increased in recent weeks, and has assumed epidemic proportions in London, Leeds, Liverpool, and Birmingham, as well as in Plymouth. All our large towns suffer now and again from the fatal prevalence of measles, but Plymouth appears to suffer from its fatality both more frequently and more severely than most of the other towns. The average annual rate of mortality from measles in the twenty large English towns during the nine years 1870–78 averaged 0·50 per 1000 of the population, which was also the rate that prevailed in London; in the nineteen provincial towns the average death-rate from measles in these nine years ranged from 0·23 and 0·26 in Norwich and Newcastle-upon-Tyne, to 0·72 in Plymouth, 0·74 in Liverpool, and 0·82 in Salford. The varying incidence of the fatality of different zymotic diseases in various towns is a subject calling for investigation, in order to throw light upon the causation of such fatality, and to afford means for its control. Whereas Plymouth during these nine years showed actually the lowest death-rate from scarlet fever among the twenty towns, it suffered together with Liverpool and Salford a constantly excessive fatality from measles. During four of the nine years under notice measles caused a death-rate exceeding 1 per 1000 in Plymouth; the rate was equal to 1·51 in 1871, to 1·92 in 1874, to 1·50 in 1876, and to 1·01 in 1878. The average rate in the nine years was, as before stated, 0·72 per 1000, and exceeded by more than 50 per cent. the average rate in London and in the nineteen provincial towns. In Brighton and Portsmouth, the two other South-coast towns included in the Registrar-General's list, the average death-rate from measles in the nine years did not exceed 0·30 and 0·41 per 1000 respectively. The endemic prevalence of diphtheria in Plymouth has more than once been the subject of special investigation. The still more remarkable fatality of measles does not appear to attract the attention it deserves. This disease caused 71 deaths in the first half of 1878, since which very few fatal cases have been recorded until the last two weeks of November, during which 9 were registered.

TRANSMISSION OF RABIES TO THE RABBIT.

M. MAURICE RAYNAUD has recently addressed an interesting note to the Académie des Sciences upon the transmissibility of rabies from man to the rabbit. This he has accomplished by the direct inoculation of a rabbit with the saliva of a man bitten by a mad dog, and the animal infected gave it in turn to two other rabbits. An important fact was elicited in the course of the experiments, showing that the tissue of the salivary glands, and probably the saliva itself, preserved its virulent properties for as long a period as thirty-six hours after death. M. Raynaud states that in a recent work M. Dabouê has been led, from theoretical considerations upon the propagation of the virus of rabies by the nerves, to formulate an hypothesis to the effect that rabies determines unilateral lesions in the economy of the dog, and he thus explains the fact shown by statistics that about one half of the total number of persons bitten by mad dogs escape further trouble or inconvenience. This hypothesis is, however, completely refuted by the results of M. Raynaud's experiments, which demonstrate that inoculations with either salivary gland proved fatal in about the same space of time. The important practical point on which M. Raynaud dwells is that rabid human saliva, since it can produce rabies in the rabbit, is clearly poisonous, and that, in accordance with all analogy, it might induce the same condition in other persons, and hence that great caution should be exercised, not only in avoiding any introduction of the poison into the body from an accidental bite of the person afflicted with rabies, but that any post-mortem wound in the autopsy of such patients should be guarded against.

A CONTRIVANCE TO PROMOTE FOOT-CHILL.

ATTENTION has been most opportunely drawn to the peril of chill to the feet consequent upon the practice of mixing salt with snow to liquefy and facilitate the removal of the latter. The plain fact is this: a combination of salt and snow constitutes a freezing mixture. Apart, therefore, from the damage to boots and clothes which the recourse to this expedient entails, it is necessary to consider whether the risk to health is not greater than ought to be incurred, or to which the community should be exposed. It is easy to

see that the vicissitudes of weather in this climate are sufficiently grave without the adoption of an arrangement by which foot passengers are compelled to paddle in freezing mixture. This consideration may well be submitted to, if not strongly urged upon, the Local Boards of certain districts in the metropolis in view of a possible continuance of the weather we are now *enjoying*.

THE ARTISANS' DWELLINGS ACT.

MR. CROSS has lately addressed a letter to the City Commissioners of Sewers in which he draws attention to the increased facilities in the erection of artisans' dwellings which the "Artisans and Labourers' Dwellings Improvement Act" of 1879 confers upon local authorities. By the third section of this Act the amount of compensation will be considerably diminished in cases where the houses or premises proposed to be taken can be proved to the arbitrator to have been, at any time between the date of the official representation and that of the confirming Act, a nuisance within the meaning of the Nuisances Act. There is, further, a relaxation of the clause which made it necessary to provide accommodation for the displaced families within or close to the area in which the improvement scheme was to be carried out. Unless there are special reasons to the contrary, this accommodation will be permitted to be provided at a moderate distance from the area to be operated upon. Mr. Cross, in his letter, further expresses a hope that the Commissioners will take advantage of these increased facilities, and he very properly points out the scandal that will arise if the dens and rookeries which are at present a disgrace to the metropolis are permitted to exist any longer. The Artisans and Labourers' Dwellings Act is admitted on all hands to be a well-intentioned measure, and we trust that the amendments which were introduced during the last session of Parliament will have the desired effect of lessening the expense of putting the Act in movement, for it is perfectly certain that unless improvement schemes can be made to, at least, pay their way, they are likely to find but small support among the large body of ratepayers. Pure philanthropy is not a vulgar virtue, but philanthropy that pays five, or even three, per cent. is certain to be popular.

HONOURS FOR THE ZULU WAR.

WE are glad to notice that the honourable distinction of "Companion of the Bath" has been conferred on four medical officers of the army and navy for their services in the Zulu campaign; Deputy Surgeon-General James L. Holloway, Fleet-Surgeon Norbury, Surgeon-Major Caleb Sherar Wills, and Surgeon-Major Charles M. Cuffe, having been gazetted last Saturday with other military officers. Drs. Holloway and Wills proceeded to the Cape with the reinforcements after the Isandlwana disaster. Mr. Cuffe, in addition to distinguished service in Zululand, served throughout the Kaffir war of 1877–78. Mr. Norbury was the senior medical officer of the Naval Brigade throughout the expedition.

GASTRIC AND DUODENAL DIGESTION.

M. TH. DEFRESNE has written a memoir on Gastric and Duodenal Digestion and on the action of Pancreatine. The conclusions at which he has arrived are, that the hydrochloric acid of the gastric juice is combined with an organic base which modifies its action and changes its properties. In order, therefore, to study peptic and pancreatic digestion, it is requisite to employ a solution of hydrochlorate of leucin prepared with the gastric mucous membrane. By this means peptic digestion may be compared with that which takes place in the stomach; it is not continuous or illimitable, but it can be filtered, and the residue can be determined. The acidity of the mixed gastric juice, in the lapse of half an hour after ingestion, is no longer due to hydrochlorate of leucin, but to the presence of lactic, sarcolactic, tartaric, malic, and other acids; and the best test of this reaction is pancreatine, which, after having remained for two hours in pure gastric juice, has no sensible effect upon starch, but after commixture with the mixed gastric juice, and neutralisation, will convert seven times its weight of starch into sugar. This difference in the nature of the acidity of the pure and of the mixed gastric juice is rendered more manifest still by artificial digestion of azotised food. If the albumin has been previously macerated in hydrochloric acid, pancreatine, after neutralisation of the fluid, only peptonises five grammes of albumin; but if the albumin be macerated in water an artificial chyme is produced, and the pancreatine after neutralisation can peptonise thirty-eight grammes of albumin. Pancreatine therefore does not undergo any alteration in chyme, but recovers all its activity in the duodenum; and one gramme of this substance can digest simultaneously thirty-eight grammes of albumin, seventy-five grammes of starch, and eleven grammes of lard.

THE SEQUELÆ OF SMALL-POX.

THOSE superficial persons who are in the habit of talking in an exaggerated way of the slight disorders that occasionally follow vaccination, as they are apt to follow any eruptive diseases, should have been present at the Clinical Society on a recent occasion, when Dr. Goodhart exhibited his case of keloid disease of the skin following small-pox in an unvaccinated young man. The case is reported in the Proceedings of the Clinical Society in THE LANCET of Nov. 22nd. But as a disfigurement and a misfortune to the person, any description would be at fault. Yet the production of disastrous consequences, in those it did not kill, is one of the almost forgotten facts about small-pox. Even in medical accounts of the disease these consequences are too lightly dismissed. Blindness, carbuncles, loss of hair, loss of nails, enlarged glands, large metastatic abscesses, skin eruptions, pigment spots, ulcers, gangrene, &c. &c., are among the legacies of this disease, to say nothing of the common disfigurement and the risk to life. We want a few more such horrible instances as that related by Dr. Goodhart to counteract the nonsense talked by those who would be delighted to see the abandonment of all protective measures against almost the most loathsome and deadly disease of recent times. The vaccination laws, which are so abused by such persons, by their very efficiency deprive their advocates of one of the most powerful arguments in their favour. They reduce even small-pox to a comparatively harmless disease.

THE STEBBING TESTIMONIAL.

THE subscription-list to the above testimonial was closed in the autumn, and the sum obtained amounted to something under £70, from nearly as many subscribers. This has been expended in the purchase of a handsome silver salver, which has been engraved with a suitable inscription, and has lately been privately presented to Dr. Stebbing. We regret to hear that the health of the reverend gentleman is but indifferent, but we trust that a fair spell of healthy life may yet be permitted him, so that he may for some years enjoy that universal regard of his friends of which the testimonial is the expression.

SCARLATINA IN IRELAND.

THIS disease appears to be becoming epidemic in several parts of Ireland. Until recently the mortality in the principal towns was inconsiderable, but of late the disease has prevailed in Dublin and Cork. In Cork, for the week ending the 22nd ult., 12 deaths were ascribed to scarlatina, making a total of 50 deaths for the past eight weeks; and

in Dublin, during the same week, 15 deaths took place, and 19 the preceding week, from this affection. Two deaths were also noted in Londonderry, being the first fatal cases reported from scarlatina in that place this year.

SOURCE OF CURARA.

MM. COUTY and DE LACORDY have lately been investigating the source of the remarkable poison known as curara, woorara, or urari. They believe themselves entitled to conclude that none amongst the various vegetable and animal juices that are added by the Indians to the products obtained from the various species of Strychnos possess the peculiar properties of curara, not even those which, like the cocculus, contain a poison that under certain conditions appears to act upon the excitability of the motor nerves. In view of the negative results furnished by the study of these accessory substances and of the positive results that have been obtained by their experiments with the Strychnos triplinervia, they have satisfied themselves that the curara of the Indians owes its poisonous properties to a Strychnos and to the different climbing plants which belong to that group. They have established this in the case of one at least of the species of strychnos employed by the most important tribes of Indians, especially the Tecunas. This plant is the Strychnos castelnœa (Weddel). Their experiments show that the Strychnos castelnœa as well as the Strychnos triplinervia yields an energetic poison, the properties of which in all respects resemble curara. In two dogs they were able to follow all the early stages of curara poisoning, and after the arrest of spontaneous respiration they demonstrated, by means of the kymograph, the persistence of the circulation of reflex vascular action and the excitability of the pneumogastric. The Strychnos castelnœa, although more powerful than the Strychnos triplinervia, is less active than might be imagined, the product of the boiling down of fifty grammes of fragments of the stem being insufficient to thoroughly curarise a small dog.

THE ARMY MEDICAL SERVICE.

WE understand that no less than eighty candidates have sent in their names for the examination for the medical service of the army, which commences at the Law Institution on Monday next. As the notice of an examination has only been advertised for three weeks, we may take it that the new Warrant is likely to make the service popular and sought after.

FOREIGN GRADUATES' ASSOCIATION.

THE annual meeting of the Foreign Graduates' Association was held at the Charing-cross Hotel on Wednesday, November 26th, 1879; Dr. Gayton in the chair. Dr. Hardwicke, of Sheffield, was elected president for the ensuing year; Dr. Easby, of Cambridge, and Dr. Gayton, of Homerton, were elected vice-presidents; and Dr. Lloyd, of Lambeth, hon. secretary.

THE collections for the Dublin Hospital Sunday Fund from 151 churches have been received, and amount to £2898, but there are upwards of sixty collections, and several promised donations, not yet paid in up to the present. It is anticipated that when all the contributions are received the total will exceed that of last year.

A CASE of small-pox was last week reported to the Sanitary Committee of Wolverhampton as having occurred in the borough. The case was that of a little boy, aged five years, who had, with his father and mother and an elder brother and sister, come from Deptford to reside in Wolverhampton. The parents stated that the child had not been vaccinated, although their other children had been. The case was regarded as an imported one, and every precaution was taken to prevent the disease from spreading. The last reported case of variola in the borough occurred in the year 1874.

THE NEW ARMY MEDICAL WARRANT.

War Office, 2nd December, 1879.

THE following Royal Warrant and Secretary of State's Instructions are promulgated to the Army by direction of the Secretary of State for War. RALPH THOMPSON.

VICTORIA R.

Whereas we deem it expedient to amend the regulations which govern the appointment, promotion, and retirement of the Medical Officers of our Regular Forces:

Our will and pleasure is that Articles 384 to 397, 401 to 432, and Articles 1195 to 1203 of our Warrant of the 1st of May, 1878, be cancelled, and that this our Warrant shall henceforth be the sole and standing authority on the matters herein treated of.

1. The officers of the Army Medical Department shall be divided into two classes—viz., Class A and Class B.

Class A shall consist of those who entered the Army Medical Department before the 28th April, 1876; those who shall enter the Army Medical Department after the date of this our Warrant; and those of Class B who may be permitted under Article 2 to exchange their terms of service for those of Class A.

Class B shall consist of those who entered the Army Medical Department on or after the 28th April, 1876, and before the date of this our Warrant, and who are not transferred to Class A under Article 2.

2. Within two years from the date of this our Warrant, a medical officer serving in Class B may, upon his application being recommended by the Director-General of the Army Medical Department, and with the concurrence of our Commander-in-Chief, be transferred to Class A by our Secretary of State. The pay of such officer shall not be reduced, while he continues to serve, below the rate he was receiving in Class B at the time of transfer to Class A.

RANK AND PAY.

3. The ranks and rates of pay of the officers of the Army Medical Department shall be as follows:—

—	CLASS A.	CLASS B.	CLASSES A & B.
	Daily. £ s. d.	Daily. £ s. d.	Charge Pay.
Surgeon-General	2 15 0	2 0 0	The Principal Medical Officer of an army in the field consisting of 10,000 men and upwards, £1 daily; of 5000 men and upwards, 15s. daily; of less than 5000, 10s. daily.
After 25 years' service	..	2 5 0	
„ 30 years' service	..	2 7 0	
„ 35 years' service	..	2 10 0	
	Yearly.	Yearly.	
At Head-quarters	1300 0 0	1200 0 0	
	Daily.	Daily.	
Deputy Surgeon-General	2 0 0	1 10 0	
After 25 years' service	..	1 12 0	
„ 30 years' service	..	1 15 0	
„ 35 years' service	..	1 17 0	
	Yearly.	Yearly.	
At Head-quarters	900 0 0	850 0 0	
	Daily.		The Principal Medical Officer of a colony where the number of commissioned officers and enlisted men is 1500 and upwards, 5s. daily.
Brigade-Surgeon	1 10 0		
After 5 years in the rank	1 13 0		
	Yearly.		
At Head-quarters	750 0 0		
	Daily.	Daily.	
Surgeon-Major	1 0 0	1 0 0	
After 15 years' service	1 2 6		
„ 5 years' service as such	..	1 5 0	
„ 20 years' service	1 5 0		
„ 25 years' service	1 7 6		
	Yearly.	Yearly.	
At Head-quarters	650 0 0	600 0 0	
Surgeon	200 0 0	250 0 0	
After 5 years' service	250 0 0		
	Daily.	Daily.	
„ 10 years' service	0 15 0	0 17 6	
Surgeon on probation	0 8 0		

4. The relative rank of officers of the Army Medical Department shall be as follows:—

As Major-General	Director-General. Surgeon-General.
,, Colonel	Deputy Surgeon-General.
,, Lieutenant-Colonel ...	Brigade Surgeon. Surgeon-Major, after 20 years' service.
,, Major	Surgeon-Major, of less than 20 years' service.
,, Captain	Surgeon.
,, Lieutenant	Surgeon on probation.

5. The pay of Medical Officers shall be issued monthly in arrear.

APPOINTMENT, PROMOTION, AND RETIREMENT.

First Appointments.

6. Every candidate for appointment in the Army Medical Department shall possess two diplomas or licences, recognised by the General Medical Council, one to practise medicine and the other surgery, and shall be registered under the Medical Act in force in the United Kingdom at the time of his appointment.

7. A candidate shall not exceed the age of 28 years on appointment as a Surgeon on Probation.

8. A public and open competition shall be held twice in the year for the admission of qualified candidates as probationers. The number of appointments so competed for shall be not less than half of the number of vacancies which shall have arisen in the last completed half-year ending on the 30th June or 31st December.

9. Not less than half the number of vacancies shall be filled up by competition, and it shall be competent for our Secretary of State to fill up the remaining number from such qualified candidates as may be proposed by the governing bodies of Public Schools of Medicine in our United Kingdom or in our Colonies as he may think proper. Every candidate so proposed shall be certified by the governing body proposing him, to be duly qualified according to a standard to be laid down by our Secretary of State, and shall be approved by the Director-General.

10. Our Secretary of State shall from time to time fix the order of precedence and the proportion in which the several Schools of Medicine shall be offered the nomination of candidates.

11. A Surgeon on Probation shall on appointment be sent to some large station for instruction in Ambulance and Hospital Corps duties, until the commencement of the next course of study at the Army Medical School. After passing through such course at the Army Medical School as our Secretary of State shall decide, the Surgeon on Probation, after passing a qualifying examination in the military medical subjects taught there, and satisfying the Director-General that he is a person of proper skill, knowledge, and character for permanent appointment in the Army Medical Department, shall be commissioned as Surgeon.

12. The Surgeons on Probation who pass out of the Army Medical School at one qualifying examination shall take precedence among each other as Surgeons, as follows:—(*a*) Those appointed on nomination according to their date of joining on probation. (*b*) Those appointed on competition according to the last day of the competitive examination, and in the order of merit at such examination, with priority over any joining under sub-section (*a*) on the last day of the competitive examination.

13. A Surgeon's commission shall bear the date of the day of his passing out of the Army Medical School.

14. A candidate for appointment as Surgeon in our Royal Malta Fencible Artillery shall be required to pass such a professional examination as our Secretary of State may from time to time determine.

PROMOTION.

Surgeon-Major.

15. A Surgeon of Class A shall be promoted to the rank of Surgeon-Major on completing twelve years' full pay service, of which at least three years shall have been abroad, if he be recommended by the Director-General.

16. Every year it shall be competent for our Commander-in-Chief, on the recommendation of the Director-General, to select, with the approval of our Secretary of State, a number of Surgeons of Class B, not exceeding six, who shall be retained in the service, and shall be promoted after twelve years' service on full pay to the rank of Surgeon-Major.

17. In a case of distinguished service, a Surgeon, if qualified, may be promoted to the rank of Surgeon-Major without reference to seniority; and in such a case the recommendation detailing the services for which the Officer is proposed for promotion shall be published in the Gazette in which such promotion shall appear.

Brigade Surgeon.

18. A Brigade Surgeon shall be selected, on the recommendation of our Commander-in-Chief, for ability and merit, from Surgeons-Major who shall have served abroad for at least eight years as Surgeon-Major and Surgeon.

Deputy Surgeon-General and Surgeon-General.

19. All promotions from the rank of Brigade Surgeon to that of Deputy Surgeon-General, and from the rank of Deputy Surgeon-General to that of Surgeon-General, shall be given for ability and merit upon the selection of our Commander-in-Chief, with the approval of our Secretary of State; and the grounds of such selection shall be stated to us in writing. In all such cases the amount of foreign service shall be expressly stated.

20. On appointment as Honorary Physician or Honorary Surgeon to Her Majesty, under Article 35, an Officer below the rank of Deputy Surgeon-General shall, if duly qualified under Article 21, be promoted to that rank, and shall remain supernumerary of his rank until he would have attained the rank of Deputy Surgeon-General in ordinary course.

21. An Officer shall not be eligible for promotion to the rank of Deputy Surgeon-General unless he shall have served at least ten years abroad, including three years in India.

RETIREMENT.

Voluntary Retirement.

22. A Medical Officer, after completing ten years' service, may be permitted to retire on the gratuity or pension laid down in Article 47, when it shall be deemed expedient by our Secretary of State. Before such voluntary retirement be permitted it shall be specially recommended by our Commander-in-Chief, and approved by our Secretary of State.

23. Any Officer of Class A who shall voluntarily retire before the age of fifty-five shall be liable to be called upon to serve, in a case of national emergency, in a rank not lower than that from which he shall retire, until he shall complete the age of fifty-five.

Compulsory Retirement.

24. On the completion of ten years' commissioned service, unless he be specially selected for further employment in the Army Medical Department, or, if he be unwilling to continue to serve therein, the services of a Surgeon of Class B shall shall be dispensed with, and he shall be entitled to receive in lieu of all pension or retirement, pension for wounds excepted, the sum of £1000.

25. A Surgeon of Class B, of less than ten years' service, disqualified for duty by ill-health, certified by a Board of Medical Officers to have been contracted in and by the Service, may, at the discretion of our Secretary of State, be granted half-pay at a rate not exceeding 8*s.* a day if he shall have served five years or more, or 6*s.* a day if he shall have served less than five years, for a period not exceeding one year at one time. In special cases in which the circumstances may appear to our Secretary of State to call for exceptional consideration, it shall be sufficient that the disability shall have been contracted in the Service.

26. At the expiration of the period of one year, if the Surgeon of Class B be able to resume his duties, he shall be entitled to complete his term of ten years' service. If he be unable to resume duty, as certified by a Board of Medical Officers, his services shall be dispensed with.

27. If the Surgeon of Class B have served five years on full pay, and be unable to resume duty as certified by a Board of Medical Officers, his services shall be dispensed with, and he shall be entitled to receive, in lieu of all further pension or pay, pension for wounds excepted, a gratuity at one of the following rates—viz.:

If he shall have completed 9 years' full pay service ...	... £800
,, ,, 8 ,, ,, ...	... 700
,, ,, 7 ,, ,, ...	... 600
,, ,, 6 ,, ,, ...	... 500
,, ,, 5 ,, ,, ...	... 400

28. If a Surgeon of Class B be unable to complete his ten years' service from any cause other than wounds or ill-health, certified by a Board of Medical Officers to have been caused in and by the Service, or reduction of establishment, he

shall be allowed not more than six months' leave without pay, after which, if unable to resume duty, his services shall be at once dispensed with, and he shall have no further claim on the Department. In special cases in which the circumstances may appear to our Secretary of State to call for exceptional consideration, it shall be sufficient that the disability shall have been contracted in the Service.

29. If the services of an Officer of Class B be temporarily dispensed with in consequence of a reduction of establishment, he shall be granted the rates of half-pay fixed by Article 25, until there be an opportunity of re-employing him, or, if he have served five years, he may retire from the Service with a gratuity according to the rates specified in Article 27.

30. A Medical Officer of the rank of Brigade Surgeon, Surgeon-Major, or Surgeon, shall be placed on the Retired List at the age of fifty-five, and a Surgeon-General or Deputy Surgeon-General at the age of sixty years.

31. When any Officer serving on 28th April, 1876, shall, under Article 30, be compelled to retire at the age of sixty, he shall have added to the Retired Pay such annual sum as our Secretary of State shall consider to be a just compensation for any net loss he may have incurred from the substitution of sixty for sixty-five years as the age for retirement, taking into account any advantages in pay or retirement he may have derived from our Warrant of 28th April, 1876, or from any of our subsequent Warrants.

Honorary Rank on Retirement.

32. A Medical Officer retiring after full pay service of twenty years and upwards, may, if recommended for the same by our Commander-in-Chief, receive a step of honorary rank, but without any consequent increase of half-pay.

EXCHANGES.

33. An Officer of the Army Medical Department shall be permitted to exchange with another Officer of the same Department under such conditions and regulations as shall from time to time be approved by us.

REWARDS AND HONOURS.

34. Good Service Pensions shall be awarded to the most meritorious Officers of the Army Medical Department, under such regulations as shall be from time to time determined by us, with the advice of our Secretary of State.

35. Six of the most meritorious Officers of the Army Medical Department shall be named our Honorary Physicians, and six our Honorary Surgeons.

SERVICE ON THE WEST COAST OF AFRICA.

36. Service of Medical Officers upon the West Coast of Africa shall be voluntary, except for those who enter the Department specially for African service.

37. Each year or portion of a year shall be allowed to reckon double towards retirement, provided that the Officer shall have served at least twelve months on the West Coast of Africa, but it shall not reckon double towards temporary half-pay or increased pay.

38. For each year's service on the Coast, a Medical Officer shall be entitled to a year's leave at home, and for every additional period beyond a year he shall have an equivalent extension of leave.

39. Officers who may enter the Department expressly for service on the West Coast of Africa, and those who volunteered for that service from the Department, after 1st March, 1873, shall receive double pay while actually serving on the coast.

40. Officers who enter the Department expressly for service on the West Coast of Africa shall enter under the same qualifications as other medical officers, but they may be admitted at a later age. They will be required to complete three years' actual service on the coast, after which they shall be eligible for general service. If it shall be certified by a Medical Board that any such officer is unfit for further duty on the coast, he shall be eligible for general service, though he may not have completed three years' service there.

41. A Surgeon-Major of the African Service who was promoted while serving on the coast, and who entered that service before the 1st March, 1873, may, on the completion of three successive tours of service on the coast, each of twelve months, in the rank of Surgeon-Major, be transferred to the General List.

42. A Medical Officer transferred from the African Service under the conditions laid down in Article 41 shall join the General Service according to the date of his actual commission.

43. The regulations contained in Articles 41 and 42 shall not apply to Medical Officers who are not of European descent.

SICK LEAVE.

44. An Officer may, on the recommendation of a Medical Board, be allowed sick leave of absence on full pay for a period of six months; but in special cases our Secretary of State may, on the recommendation of the Director-General, extend such sick leave on full pay for a further period not exceeding six months.

TEMPORARY HALF-PAY.

45. A Medical Officer who may become unfit for service in consequence of wounds received in action, or of ill-health contracted in and by the performance of military duty, as certified by a Medical Board, may be granted temporary half-pay, to be renewed on a report of a Medical Board, from time to time, until he shall recover, and until an opportunity shall occur for his re-employment. In special cases in which the circumstances may appear to our Secretary of State to call for exceptional consideration, it shall be sufficient that the disability shall have been contracted in the service.

46. If after remaining for a period of not less than one year on half-pay he shall be reported by a Medical Board to be permanently unfit for further service, he may, provided he shall have been on full pay for a total period of at least five years, be placed upon permanent half-pay.

NON-EFFECTIVE PAY.

47. The rates of Gratuity, Retired Pay, or Half Pay for Medical Officers shall be as follows:—

	Class A. Gratuity.	Class B. Gratuity.
Surgeon and Surgeon-Major:	£	£
After 10 years' service ..	1200 ..	1000
,, 15 ,, ..	1800	
,, 18 ,, ..	2500 ..	
	Daily.	Daily.
Surgeon-Major:	£ s. d.	£ s. d.
After 12 years' service ..	.. ..	0 11 0
,, 15 ,, ..	.. ..	0 13 6
,, 20 ,, ..	1 0 0 ..	0 16 6
,, 25 ,, ..	1 2 6 ..	1 0 0
,, 30 ,, ..	1 5 0	
Brigade Surgeon:		
After 20 years' service ..	1 7 6	
,, 30 ,, ..	1 10 0	
Deputy Surgeon-General ..	1 15 0	
After 20 years' service ..	.. ..	1 1 0
,, 25 ,, ..	.. ..	1 3 6
,, 30 ,, ..	.. ..	1 5 6
Surgeon-General	2 0 0	
After 20 years' service ..	.. ..	1 1 0
,, 25 ,, ..	.. ..	1 15 6
,, 30 ,, ..	.. ..	1 17 6

Temporary Half-pay.

	Daily. s. d.
A Medical Officer, under 5 years' service ..	.. 6 0
,, ,, after 5 ,, ..	.. 8 0
,, ,, ,, 10 ,, ..	.. 10 0
,, ,, ,, 15 ,, ..	.. 13 6

48. If a Surgeon-Major or a Surgeon of Class A, whose transfer has been permitted from Class B, shall retire voluntarily on a gratuity, the gratuity awarded under Article 47 shall, in his case, be reduced by the sum of £250.

General Regulations.

49. Our Secretary of State may, when he shall deem it fit, employ Medical Officers on the Retired List and Medical Officers of the Militia on the Departmental List, whose regiments are not embodied, in special situations under such conditions, as he shall from time to time determine; but such Officers shall in no case retain their appointments after attaining the age of sixty-five years, and on ceasing to hold such appointment shall revert to the retired list with the rate of retired pay of which they were in receipt when appointed to such special situations.

50. A retired Medical Officer, holding such an appointment, shall cease to draw his retired pay, and shall receive a consolidated salary, exceeding the amount of such retired pay by £150 a year, which shall include all allowances.

51. A Militia Medical Officer, holding such an appointment, shall draw a salary of £150 a year, in addition to the pay and allowances of his Militia rank while his regiment is under preliminary drill or training, as laid down by our Warrant of the 12th July, 1876; provided that during such

drill or training he shall, if necessary, supply a substitute at his own expense for the performance of all medical duties at the station other than with his Militia regiment. Such salary of £150 shall be inclusive of all remuneration for attendance on the families of the Militia regiment, and for the examination of recruits, and of all allowances during the non-training period; but shall give no claim to half-pay, pension, or retired allowance.

52. In all matters not specially provided for in this our Warrant, the Officers of the Army Medical Department shall be subject to the General Regulations for the Departments of our Army.

Given at our Court at Windsor, this 27th day of November, 1879, in the 43rd year of our reign.

By Her Majesty's Command,
FRED. STANLEY.

SECRETARY OF STATE'S INSTRUCTIONS ON THE FOREGOING WARRANT.

1. The foregoing Warrant will not be applicable to Army Medical Officers while in India or on the Indian Establishment, and no additional emolument will, under its provisions, accrue to Medical Officers serving in that country.

2. The names of the Queen's Honorary Physicians and Surgeons who are Officers of the Army Medical Department will be inserted in the Army List immediately after the names of Her Majesty's Aides-de-Camp, and such officers will be entitled to attach to their names the letters Q.H.P. and Q.H.S. respectively.

3. The name of a Medical Officer who retires voluntarily before the age of fifty-five, and under Article 23 is liable until then to be called upon to serve in any case of national emergency, will be retained in italics in the Army List with those of Effective Officers.

4. The appointment of Brigade Surgeon or Surgeon-Major in a Station Hospital will, at certain stations, be offered to retired Medical Officers or to Militia Medical Officers, duly qualified.

5. The appointment will be for five years, subject to renewal, but not tenable after the age of sixty-five, nor, in the case of a Militia Medical Officer, while his regiment is embodied.

6. The Brigade Surgeons will be Executive Officers, though available for administrative charge.

7. Principal Medical Officers will make the best arrangements the service will admit of, to avoid throwing mere routine duties on the Senior Executive Officers.

REGULATIONS AS TO ALLOWANCES.

8. Medical Officers doing duty with regiments, battalions, or corps will be permitted to draw staff allowances.

Lodging and Furniture.—Medical Officers' Quarters.

9. The following will be added after paragraph 6, Clause 56*a*, Army Circulars, 1878 :—6*a*. In any case where a district Medical Officer's quarter is not assigned, a Surgeon-Major doing duty with a regiment, battalion, or detachment of troops will not take priority over the Officer Commanding such regiment, battalion, or detachment as regards the choice of quarters.

Servants' Allowance.

10. Medical Officers will have the option of employing as servants privates of not less than two years' service in the Army Hospital Corps, or of drawing the money allowance in lieu. The privates so employed will be men of short service, and will not receive Departmental Pay.

Forage Allowance.

11. The following will be added to paragraph 1, Clause 58, Army Circulars, 1878, which prescribes the number of horses for which forage or an allowance in lieu thereof may ordinarily be drawn by officers.

DEPARTMENTAL OFFICERS.

	At Home Stations.	At Foreign Stations.	With an Army in the Field.
Surgeon-General	3 horses.	3 horses.	4 horses.
Deputy Surgeon-General	2 ,,	2 ,,	3 ,,
Surgeon-Major	1 ,,	1 ,,	2 ,,

12. Paragraph 3, Clause 58, Army Circulars, 1878, so far as it relates to Officers of the Army Medical Department, is hereby cancelled.

Note.—It will be seen by the Secretary of State's instructions appended to the Warrant that it "will not be applicable to Army Medical Officers while in India or on the Indian Establishment, and no additional emolument will, under its provisions, accrue to Medical Officers serving in that country." We understand that there has always been a special scale of pay applicable to Medical Officers serving in India, exceeding that laid down for the Department at home and in the Colonies, and that it is not intended at present to make any alteration in it. We have ascertained the scale now in force in India, and append it with the view of making the information complete as to the rates of pay of the Medical Officers in all parts of the British dominions :—

		r.	a.	p.
Surgeon ...	Under 5 years	317	8	0
	After 5 ,,	335	12	2
	,, 6 ,,	433	10	2
	,, 10 ,,	450	14	5
Surgeons-Major	Under 15 ,,	789	3	0
	After 15 ,,	825	11	5
	,, 20 ,,	1056	9	7
	,, 25 ,,	1093	2	0
Superintending Surgeon-Major		1400	0	0
Deputy Surgeon-General		1800	0	0
Surgeon-General		2700	0	0
Cavalry and R. H. Artillery	90 rupees per month extra.			
Royal Artillery	30 ,, ,, ,,			
Charge of H.M. Depôts by Surgeons	150 ,, ,, ,,			
,, Divisional Staff	100 ,, ,, ,,			
,, Brigade	30 ,, ,, ,,			

THE DEBATE ON ANTISEPTIC SURGERY.

THE promised discussion upon antiseptic surgery at the Metropolitan Counties (South London District) Branch of the British Medical Association, took place on Wednesday evening at St. Thomas's Hospital, Mr. John Wood, F.R.S., President of the Branch, in the chair. There was a very large attendance, including well-known hospital surgeons, the spacious Council-room in the Treasurer's house being filled. It was anticipated that Mr. Lister would take this opportunity of replying to the recent criticisms on his method passed by Mr. Savory in his address at Cork, and also that other surgeons would deal with the question from Mr. Savory's standpoint. But so far only one speaker, Mr. Bryant, can really be said to have taken up this ground. The proceedings were commenced by the chairman, who pointed out that the subject had a scientific and a practical side, and that the time had come for definite expressions of opinion upon the value of the method. He then called upon Mr. MacCormac to open the debate. Mr. MacCormac, premising that all surgeons nowadays were more or less antiseptic in practice, claimed for Mr. Lister's method that it was an exact method, founded upon the definite theory of wound-contamination by air charged with foreign matter (germs) capable of exciting putrefactive processes. Antiseptics so changed the air that it no longer led to these processes. The antiseptic method prevents fever and pain, and diminishes the duration of treatment, whilst it has also widened the field of operations of expediency. To carry it out fully, the surgeon and his assistants must be thoroughly convinced of the truth of the germ theory. Everything depended on the first dressing, and on drainage, and he showed some drainage tubes of decalcified bone, just introduced by Esmarch, which had the great advantage of obviating too frequent a change of dressings. As to the results obtained by the method he stated that, out of forty-five cases of division of bone, thirty of which involved the knee-joint, operated on in St. Thomas's Hospital, all recovered; the joint cases with retention of free mobility. Again, of fifty-four cases of compound fracture treated in the same hospital before the use of antiseptics, twelve died, eight from blood-poisoning; whilst since the employment of antiseptics there had been sixteen such cases without a death. Mr. Mac Cormac concluded by giving some striking statistics upon the point furnished by Professor Reyher, consulting surgeon to the Army of the Caucasus in the late war.—Mr. Bryant followed. He

thanked Mr. Lister for his advocacy as largely stimulating the increased attention to hospital hygiene which of late years has made such rapid progress. But "Listerism" was only a part of antiseptic surgery, and he himself claimed to be antiseptic in his practice, since he strove always to neutralise the conditions tending to decomposition and suppuration of wounds. And this he claimed to effect with the use of ordinary precautions —of cleanliness, drainage, and of rest to injured or diseased parts. In the absence of fever, &c., his case-books would show as good results as any of those who followed strictly Mr. Lister's method. He especially criticised the table of cases from Mr. Lister's practice, published last week by Mr. Watson Cheyne, many of the cases included being so trivial that the results were not surprising.—Mr. Macnamara believed pyæmia to be prevented by the use of the antiseptic method, although septicæmia might not be. He pointed out that in a large hospital with good sanitation the atmosphere might be so pure that antiseptics were not necessary; but that the case was different for hospitals under other conditions he showed from his own experience in India. Before the days of antiseptic surgery hardly a case of compound fracture occurred but did not end fatally from pyæmia, erysipelas, &c. In 1870 antiseptics were introduced, and the mortality in such cases (the other conditions being unaltered) steadily fell in proportion as the method was perfected, till before he left India there was not a case of compound fracture but recovered. He was glad that Mr. Lister had not published statistics, and hoped he would not do so, for they should not form the basis of practice.—Mr. Barwell pointed to the change wrought in Continental hospitals since the introduction of the method. He also stated that he had excised loose cartilages from the knee-joint in six cases, without a bad symptom, and with retention of free mobility, whilst he had performed seventy osteotomies without a bad result in any case—facts which bore strongly in favour of the method. Mr. Spencer Wells next spoke, and, alluding to his own practice, urged that since he had followed Listerism the rate of mortality after ovariotomy had diminished to a far greater extent than could be accounted for by simply increased care and experience. He had lately had thirty-eight consecutive cases of ovariotomy and five of hysterotomy without a death; whilst, of eighty-four cases treated antiseptically there were six deaths, as compared with twenty-one deaths in the last series of eighty-four treated without antiseptics. — Mr. T. Smith quoted the striking experience of Nussbaum as overwhelming evidence in favour of the adoption of antiseptics ridding a hospital of hospital gangrene, pyæmia, erysipelas, &c., formerly rife in the wards. But the state of things in the Munich Hospital did not exist in any British hospital; so that in this country the elements of comparison of the value of antiseptics were wanting, and, as a matter of fact, even the opponents of Lister followed antiseptic practice. Mr. Lister had introduced catgut ligatures, and brought carbolic acid to light, and no surgeon would wish to go back to the old days when these things were unknown.—Mr. Holmes urged the comparison of results in the practice of the different surgeons at Mr. Lister's own hospital, as likely to afford statistics of a reliable and valuable kind. He agreed with Mr. Smith that since Mr. Lister's advocacy of the principles all surgeons had become to a certain extent antiseptic in practice; but he would not admit that to practise antisepticism required a faith in the germ theory, of which he had never seen any proof. He also demurred to deductions being drawn from Continental hospitals, where all sanitary rules were set at defiance.

Professor LISTER.—I cannot allow the remarks which my friend Mr. Holmes has just made with reference to my friend Professor Nussbaum to pass without a word of remonstrance. I understood Mr. Holmes to say that Professor Nussbaum had been content with the fearful condition in which his hospital was before the introduction of strict antiseptic treatment. Such is very far from being the case. Professor Nussbaum suffered agonies—mental agonies—from the condition of his hospital. He has two hospitals under his charge—one the great Allgemeines Krankenhaus, the other a large private hospital situated at a little distance from Munich, and the latter was almost free from hospital disease. In the great Allgemeines Krankenhaus he tried, as he states in the work referred to by Mr. Smith, various applications, carbolic acid, and other antiseptics. He also tried the open treatment. He used these and other means with the utmost zeal and energy in the desire to get rid of the pestiferous condition of his wards, but he failed. What the explanation of the failure may be it is not necessary for me to inquire into, but what I wish to say is this, that Professor Nussbaum was not indifferent to the conditions under which he worked, and that he was most earnest in his attempts to get rid of that condition. But then, further, I must protest against regarding with absolute indifference Professor Nussbaum's present results: because he does not only say that he has made an immense improvement on the previous pestilential condition of the hospital, but he tells us he has got a present condition which is superior, I venture to say, to that of any hospital which has not introduced strict antiseptic treatment. He tells us, that since he introduced strict antiseptic treatment he has not had one case of pyæmia, not one case of hospital gangrene (there having been previously 80 per cent.), and that he has abolished erysipelas altogether. Do you believe this statement? In his last edition he indignantly denies the possibility of falsehood on his part in this matter. He has been charged with exaggeration, and points out how such misrepresentation on his part would be not only criminal but impossible, seeing that the Professor of Pathology would not be so civil as to conceal cases of pyæmia if they occurred, this Professor of Pathology having the duty of performing all post-mortem examinations. Now, Sir, if we are told that these diseases have been banished from the hospital we must not say that this is a fact of no consequence, because that same hospital was previously a pest-house. That seems to me a most astounding mode of argumentation. Surely to be absolutely free for five years from these hospital diseases is a matter which would be of enormous moment in any hospital in this country. I do not hesitate to say that Professor Nussbaum has achieved splendid results, and all the more striking from the fact that his hospital was previously a pest-house. Well, Sir, I have been often reproached for not having produced statistics, and it has been hinted, and the hint has been lately pretty strongly reproduced, that I have suppressed statistics because I had none which I should not be ashamed to produce. Sir, the truth is that life is short, and that when every day begins one has to consider what is the occupation which is most likely to be valuable, and feeling, as I do, very much as Mr. Macnamara does with regard to statistics, I have felt that there was every day something both more congenial and, I hoped, more profitable to do, than to compile statistics. But, recently, my friend Mr. Watson Cheyne, who has had my hospital books from 1871 open to him, has looked over my cases and made a statistical compilation, and I propose to-night to make some reference to what he has done. I may say I do not think I am fairly open to the charge of having withheld statistics with regard to the question of hospital diseases. When I left Glasgow I published a statistical account with reference to these diseases, and showed, as far as I could judge, that there had come over my wards, which previously had been amongst the most unhealthy in the kingdom, a wonderful change, a surprising alteration since the introduction of the antiseptic treatment; while in other wards of the same hospital, the old conditions remained unchanged. Then, at the time of the meeting of the British Medical Association in Edinburgh, in 1875, in the address I delivered as President

of the Surgical Section, I gave a further account to the same effect, showing that in Edinburgh, although I had been working under most unfavourable hygienic conditions, nevertheless still further progress had been made in hospital salubrity. Therefore I do not think it is quite fair to say I have never given statistics. But it seems that something more detailed is desired; that it is not sufficient to say I have only had one case of pyæmia in five years in a great hospital, with an average of sixty patients under my charge, but you want me to say I have had so many amputations with no pyæmia, so many excisions of the mamma with no pyæmia, and so forth. I confess I do not see the force of that argument; for, if I could be supposed guilty of making the false statement of only having one case of pyæmia in five years with sixty beds under my charge, I should be equally capable of compiling a false table of statistics. We have lately had presented to us by Mr. Savory a sample of statistics which I suppose may be regarded as a very good one, ranging over a large area, from the great experience of St. Bartholomew's Hospital, where there have been in three years—1876-7-8—2862 cases of injury, and 1235 major operations—a large mass certainly to deal with; and he tells us that the deaths from injury have been 7·47 per cent.; the deaths after operation 5·82 per cent.; that the deaths from blood-poisoning, including pyæmia, septicæmia, and erysipelas, had been, after injury, ·42 per cent., and after operation, 1·44 per cent. These statistics show a noble amount of surgical success, and, I do not hesitate to say, not many years ago would have been considered almost incredible. But I would remark, in the first place, that Mr. Savory gives the result *en masse* of the practice of four surgeons. Now Mr. Savory himself, as Mr. Smith has remarked, uses some antiseptic means. For instance, he employs the catgut ligature, which certainly renders death from hæmorrhage and also death from blood-poisoning much less probable than it was before. He also uses other antiseptic means. Further, Mr. Savory includes the practice of the late lamented Mr. Callender. I once went through Mr. Callender's wards, and I found that he was practising a very careful antiseptic treatment. He did not use the spray, it is true, and for many years I did not use the spray myself, but with that exception Mr. Callender was practising a thorough antiseptic treatment. His cases of compound fracture were treated with pieces of lint steeped in carbolic oil, and painted every day with it, reminding me exactly of my own early cases of compound fracture. I do not mean to say that Mr. Callender's good results were all due to this antiseptic element. I admired the pains and the ingenuity with which he avoided movement in his wounds and so forth, but I do not hesitate to say that his success was largely due to antiseptic management. The practice of Mr. Smith is also included in Mr. Savory's statistics, and Mr. Smith in many cases adopts the very practice which I have recommended; therefore I say we cannot regard these statistics, excellent as they are, as statistics of a hospital where no antiseptic treatment is adopted. I would add that, even if Mr. Savory had used no antiseptic means whatever, he would nevertheless have benefited by the antiseptic practice of his colleagues. I was informed lately by a surgeon of the great Lyons Hospital, which used to be almost a pest-house, that one of the surgeons of that institutions still refuses to use the antiseptic treatment, but, as the surgeon told me, he benefits by the practice of his colleagues. It is natural it should be so, because the effect of strict antiseptic treatment by three surgeons and non-antiseptic by the fourth, is simply to convert a large hospital into a small one with reference to the question of hospital disease. Having said thus much, I will refer to my own statistics from November, 1871, to August, 1877, when I left Edinburgh. And first I will speak of injuries. Of these I have but a small number to refer to compared with the great array of Bartholomew's. The fact is, the great Infirmary in Edinburgh, while it is a metropolitan hospital for Scotland for surgical disease, is not one to which very many injuries come, and the great majority of these are treated as out-patients. And I may remark that with antiseptic management we are able to treat as out-patients many injuries which formerly we should have felt bound to admit into hospital. Thus I have only seventy-two cases of injury to speak of in these five years and three-quarters. Nevertheless, they were all somewhat severe injuries. Thirty-three were compound fractures, and seven were wounds of joints conservatively treated. In these seventy-two cases of injury I had four deaths, which gives us 5·7 per cent. The Bartholomew statistics are, for cases of injury, 7·47 per cent., so that mine are a little better. None of these seventy-two cases died from blood-poisoning. Then we come to operations. All my operations recorded in the case-books were 845; of these thirty-seven died, or 4·4 per cent. Now Mr. Savory includes in his table only major operations. The term "major operations" is very vague and arbitrary. I therefore have thought it better to put down all my cases of operation, without excluding—as Mr. Savory has done—any group for any reason whatever. But Mr. Cheyne, in going over the operations, has considered that there were 120 which might be fairly called minor operations. The great majority of minor operations, I may remark, have been treated as out-patients. Subtracting, then, these 120 minor operations, I have 725 major operations. Of the 120 minor operations not one died, and therefore by subtracting them I increase my percentage of mortality. We still have 37 deaths, but these now give 5·1 per cent., while the St. Bartholomew's statistics give 5·82 per cent.—somewhat greater, but not very much so, I confess. I cannot help remarking how easy it would have been for me to manipulate these statistics a little, and to make the result look better. For example, I had several operations which I have included among the major operations, which were very minor in point of operative procedure; for instance, there were three cases of spina bifida in which I tried antiseptic drainage. The operation consisted of introducing with a needle one or more threads of horsehair, and one case of chronic hydrocephalus was treated in the same manner—a very minor operation, certainly; yet each one of these was followed by death. I have considered that, in consequence of the greatness of the interest involved, it was only right to regard these as major operations, and every case in which I have had a death I have included in the major operations. Now, if I had chosen to manipulate, and say that these were minor operations, although they happened to be fatal, I might have greatly reduced the percentage of my mortality. But I have done what I considered more honest, and, as aforesaid, my mortality is 5·1 per cent. for major operations, as compared with the 5·8 of the St. Bartholomew's statistics. Now, as to the deaths, we come to the great question of blood-poisoning. I had six deaths from blood-poisoning in my 725 operations, or ·82 per cent. The Bartholomew's percentage was 1·44 per cent. of deaths, or nearly double mine. The cases of blood-poisoning were two of pyæmia, two of septicæmia, and two of erysipelas. But these cases of blood-poisoning require to be further considered. There is a very weighty statement attributed to Morgagni, to this effect, "*Perpendenda non numeranda observationes*," which may be rendered in English "cases should be pondered, not numbered"; and if we are to derive any benefit from these statistics we must look into details, as has been remarked by Mr. Holmes. Now of the various operations I performed some were, from the conditions of the case, capable of being performed antiseptically; while in others this was impossible; as, for instance, where putrid sinuses existed in the vicinity of joints, or in lithotomy, removal of the tongue, and so forth, where we operate in parts where septic material must inevitably be present. There are therefore certain operations which we may call antiseptic, and others septic operations. Now, if I divide my operations into these two groups, I find that the antiseptic operations were 553, and that of these 553 only two died of blood-poisoning; and then, when we look into these two, we find that one was a case of septicæmia occurring where the mamma had been removed, and the axilla cleared out to the collar-bone, and I was aware that on one occasion, ten days after the operation, all having till then gone on well, the spray was carelessly withdrawn from the wound at the critical time when the drainage-tube was removed from the axilla. The other was a case of erysipelas, also after removal of the breast—the only case of death from erysipelas in antiseptic cases; and that during what I cannot help regarding as an epidemic of erysipelas in Edinburgh in that particular year. The septic operations were 292, being little more than half the number of the antiseptic ones, yet the deaths from blood-poisoning were four or eight times as numerous in proportion. We had four deaths from blood-poisoning.[1] That seems to me very instructive. Then,

[1] Of these four cases two died from pyæmia (one an amputation of the penis, the other a plastic operation on the nose), one from septicæmia (a case of excision of the tongue), and one from erysipelas (a case of small abscess of the neck, opened by the house-surgeon without antiseptic precautions).

further, if I divide the time into two periods—the time before the Edinburgh meeting of the British Medical Association in 1875, and the time after—I find, as might be expected, that matters had improved since that period; 1871 was the date of the introduction of the spray, and at first we were working comparatively under difficulties. But since 1875 the antiseptic treatment has been carried out more effectually. Accordingly we find that between 1871 and 1875 the percentage of the deaths after all operations was 4·7, while from 1875 to 1877 the percentage of deaths was only 3·8—that is to say, out of 295 operations we had only eleven deaths. Then, if I look at the question of blood-poisoning in the last two years, I find that out of those 295 operations and wounds, to which must be added a certain number for accidental wounds, I had only one death from blood-poisoning, and that one death from blood-poisoning was a case of pyæmia, where I had performed a plastic operation to make a new nose. I endeavoured to turn aside part of the ascending process of the superior maxillary bone to serve as a support. I split the bone with pliers; and I was quite conscious I had made a mistake. That was a case in which antiseptic treatment was impossible in consequence of communication with the nasal cavity. The patient died after rigors, and although I made careful search, and carefully dissected the bones concerned and the veins, there was no pus found in the cancellated tissue or in the veins leading from it. Nevertheless, there were abscesses both in the lungs and liver, and I freely admit that the case was one of pyæmia resulting from the operation. That was the only case of blood-poisoning in two years with 295 operations. In order to do justice to my subject it is absolutely necessary to go a little further into detail. During the five years and three quarters I have referred to, there were eighty major amputations, and out of these I had nine deaths, or 11·25 per cent. Now that, compared with what Mr. Erichsen says in his book on Hospitalism (published in 1847), that we must expect in major amputations from 35 to 50 per cent. of mortality, seems very good. But I confess I should not be at all satisfied with nine deaths in eighty amputations without something more to explain them. Now, if we look into the details, first we had three amputations at the hip-joint. One of these was a primary amputation, and the patient was moribund on admission. I operated without practically any hope of saving the man, but I have seen such a thing as a patient coming round after being pulseless and in an apparently hopeless condition. Two other cases were not primary. One was the case of a tumour reaching considerably above Poupart's ligament. The operation was one of tremendous difficulty, and the patient sank as the immediate result of the operation. Such a case as that has no bearing whatever on the question of mortality after amputation. The third case was one in which I operated for myeloid disease of the thigh-bone. At first I amputated through the trochanters, where the bone looked sound when divided, but afterwards, on making a careful section and a microscopical examination, there appeared to be disease. I therefore proceeded to amputate at the hip-joint the next day. The two operations, one following after the other, reduced that man so much that within twenty-four hours he was dead. Now I say you may eliminate those three cases, for they do not bear upon the subject. The same is to be said of two deaths after primary amputation in the thigh. One was a double amputation. Both were in a state of collapse before the operation, and neither rallied. I had four primary amputations at the shoulder-joint, and one of the patients died. It was a railway injury, with the scapula as well as the arm extensively shattered, and the man was in a state of collapse when he was admitted, and never rallied. That case is in the same category—it has no reference to the question of mortality after amputation; the only question was whether I was prudent or not in amputating at all. We had one death from amputation at the shoulder for disease. It was a case of malignant tumour of the arm. The stump was doing perfectly well, but after some time the patient died of hæmorrhage from another tumour in the femur, of the existence of which we were not aware. This gave way, and hæmorrhage took place into the substance of the thigh. That case, therefore, had nothing to do with the question of amputation of the shoulder-joint. The vessel gave way in the thigh, and the patient died of internal hæmorrhage. I had twenty-five amputations for disease in the thigh. One of these patients died, but it was nine weeks after the operation, when the stump was cicatrised, and he died from diphtheria. As far as the amputation was concerned, it was a case of recovery. I had eighteen amputations of the ankle, and of these one patient died, but that was a boy who three months after the operation, when the wound was almost absolutely healed, died of cerebral hæmorrhage. With regard to the amputation this also was a case of recovery. Looking, then, at these cases of amputation, I may say that no patient died from a preventable cause; every patient recovered who had a chance of recovery. Then there was one other class of cases which we used to consider exceedingly dangerous with regard to the risk of pyæmia—cases of ununited fracture treated by cutting down on the seat of fracture and removing the ends of the fragments. We used to operate thus upon some of these cases in the upper limb, but in the lower we considered that the risk of pyæmia was so great as to prohibit the procedure. In the five and three-quarter years I have referred to I have operated eight times for ununited fracture of the thigh, nine times for ununited fracture of the leg, once for ununited fracture of the clavicle, four times for ununited fracture of the humerus, and five times for ununited fracture of the forearm—in all, twenty-six cases, and so far as I know all those patients are alive and well—not one of them died. I would now refer for a moment to the statistics to which Mr. Bryant has so disparagingly alluded—the statistics published last week by my friend Mr. Cheyne. I will not dwell upon the cases of injury, because confessedly cases of injury are uncertain; but I do say when you have a series of twenty cases of healthy joints opened, and kept open without a single failure as regards the septic element, it is a fact of very great importance. But here, Sir, I come to another order of statistics where, as far as I am able to judge, we have evidence of a new principle coming into play. I may be wrong, but it seems to me that, if you were to open a healthy joint, keep the wound open and put a drainage-tube into it, and take that drainage-tube out every day and wash it, and put it in again, not using antiseptic means of some sort or other, you would infallibly have more or less of inflammatory disturbance, and it would be impossible to have the condition of things which we now look upon as normal—namely, no tenderness, no blush of redness, no puffiness, no uneasiness, not to mention no suppuration. As far as I am able to judge, this is a kind of fact of a new order, showing that we have a new principle at work. It seems to me, therefore, of great importance to publish cases of this kind, even though they be only individual cases, which have been somewhat hardly reflected upon by some who have commented upon them. It has been said "the publication of isolated cases, however good, proves nothing." I say that one individual case, if it shows new pathological facts, is worth as much as a million. I have published, for instance, numerous cases to show that a great abscess connected with disease of the vertebra may be opened by free incision, a drainage-tube introduced, strict antiseptic treatment being used, and that from that hour there is not another drop of pus. I believe this is a fact as new to pathology as it is beautiful in practice. Then I have pointed out again and again that you may have exposed in an open wound a blood-clot, no matter how large; and that this blood-clot may remain not only free from putrefaction, but indefinitely without suppuration, so that in the course of time, when you remove its upper surface, you find a scar beneath, without a drop of pus or a granulation having ever been formed. This, again, as far as I am able to judge, is new in the history of surgery, and indicates that we have a new principle at work. Further, I have given evidence to show that dead tissue, if protected from putrefaction and also from the stimulation of antiseptic substances, may be absorbed in a way that I had never before supposed possible; that even a large piece of dead bone may have granulations grow over it; and these overlapping granulations may, as it were, eat it away till it is reduced to a very small size. That, again, as far as I can judge, is an indication of a new principle. Then, as regards the catgut ligature, that falls into the same category. Here we have a piece of dead tissue absorbed, and I have described how the process takes place—how there is an absorption of dead tissue, and how living tissue comes to take its place. That, I say, is something quite new. If these matters have not attracted attention, it cannot be because they are not worthy of it; I presume it is because I have not capacity to bring them before my professional brethren with sufficient force to impress them upon them. It is not, I say, that these things are unimportant; but that they are not believed. With regard to the operation for

transverse fracture of the patella, to which reference has been made, instead of its being thought probable that no harm would come of it, it was supposed to be a most dangerous operation, and hints were thrown out that if anything went wrong with the patient I ought to be brought up for manslaughter. With regard to abscesses, one of our best provincial surgeons was at King's College, and saw some of the cases there. He said, "Do you mean to tell me that in the case of a great psoas abscess connected with disease of the vertebræ no pus is formed from the time you squeeze out the original contents?" He seemed to think that the thing was only made out a day or two before, instead of being a matter of practice for years past. Then as regards the organisation of the blood-clot. I know that this has been simply discredited, but I will not occupy the time of this great meeting by going into the evidence showing that this process really takes place. Nor will I dwell upon the absorption of dead bone, but I would like to say a word or two about the catgut ligature. It has been said, "Oh! the organisation of the catgut ligature is all nonsense; the ligature is dissolved." I confess I do not understand how it is that some gentlemen are disposed to believe the more unlikely thing rather than the natural and the probable one. Ask any chemist, is it a probable thing that a piece of catgut would be dissolved, even if put into pure water, unless it putrefied? He would assuredly say that the substance of the catgut is an insoluble substance. It may remain in cold or warm water any length of time without being dissolved; still less would it be dissolved in a concentrated mass of albumen. Let anyone try the experiment; let him put the catgut, as I have done, into putrid serum for any length of time—it will not be dissolved, however long it is there. Then let him put it into non-putrid serum, which he may do by following the method which I have described in the Path. Trans. (and it is a sort of experiment that I would recommend my friend, Mr. Holmes, to try, and then I think he will be convinced that there is something in the germ theory), and he will find that the catgut will not be dissolved. It is not a matter of dissolution, it is a matter of absorption by the living tissues. The wandering cells infiltrate this dead nutritious material, and the living tissue grows at its expense. I am sometimes ashamed for my own professional brethren and their scientific credit. I had recently sent me a pamphlet by a young German surgeon,[1] who has been making experiments to determine whether the absorption of the dead piece of tissue is performed chiefly by the wandering of leucocytes, or by other tissue elements. He steeped a piece of some organ, such as the liver, in spirits of wine, so as to make sure that it was dead, and then put it into the abdomen of a rabbit, and after a certain time he killed the rabbit, and looked at what was going on. His object was not to demonstrate that the piece of dead tissue was organised by the substitution of growing tissue for it, but to see which of the living elements were concerned in the process. Therefore, Sir, I confess it seems to me that statistics are unimportant in reference to the consideration of these great pathological truths, which I believe to be new truths. Professor Maas, of Freiburg, lately sent me an introductory lecture which he gave to the students, in which he referred to the uselessness of statistics with regard to the antiseptic treatment. But he said he should like anybody who wants to be convinced of the value of the antiseptic treatment to try the following experiment, which has been often performed. In a certain number of rabbits tie the ureter with a silk thread without antiseptic treatment, and in a number of other rabbits tie the same organ with catgut. Infallibly in those rabbits where the silk is tied without antiseptic treatment you have suppurative pyelitis, and in the others you have simply hydronephrosis. When at Amsterdam I had evidence of the same character from two different and independent sources. One was the illustrious Virchow, who told me what antiseptic treatment had done for vivisection. "Without the antiseptic treatment," he said, "if we took away an organ the inflammation and fever so complicated the matter that we could not judge of the results, but now with the antiseptic treatment we take away an organ and we can see uncomplicated the result of its removal." That seemed to me, stated in a very simple way, to be a beautiful and very important confirmation of antiseptic principles. Two different ophthalmic surgeons have also told me that in using the antiseptic treatment in extraction of cataract, they found that, instead of it being a question how much discharge there was after the operation, there was absolutely none; the sclerotic and the conjunctiva were as white as if the patient had not been touched. That again seemed to be a very beautiful confirmation of antiseptic principles. I feel I owe an apology to the meeting for having detained it so long, and I owe you my thanks for having listened to me so patiently. In such a gathering of medical men as I see before me I cannot avoid speaking warmly on a matter so near my heart. I have been charged with enthusiasm; but I regard enthusiasm with reference to the avoidance of death, pain, and calamity to our fellow-creatures as a thing not at all to be ashamed of; for I feel this to be a matter of which I may say in the words of Horace:—

"Æque pauperibus prodest, locupletibus æque,
Æque neglectum pueris senibusque nocebit."

The meeting, which lasted for upwards of two hours, was adjourned for a fortnight, on the motion of Mr. Jonathan Hutchinson, seconded by Mr. Hulke.

[1] Tillmanns: Centralblatt für Chirurgie, 1879, No. 46.

HEALTH OF LARGE ENGLISH TOWNS.

FORTY-EIGHTH WEEK OF 1879.

THE continuance of unseasonably cold weather caused a further increase in the rate of mortality last week. In twenty of the largest towns, containing nearly a third of the entire population of England and Wales, 5160 births and 3567 deaths were registered in the week ending last Saturday. The births were 22 below, while the deaths exceeded by 190, the average weekly numbers during 1878. The deaths showed a further increase of 79 upon the numbers returned in recent weeks, and were equal to an annual rate of 25·2 per 1000, against rates increasing steadily from 21·9 to 24·7 in the four preceding weeks. During the past nine weeks of the current quarter the death-rate in the twenty towns has averaged 22·1 per 1000, against 22·0 and 22·9 in the corresponding periods of 1877 and 1878. The lowest death-rates in these twenty towns last week were 15·4 in Portsmouth, 17·2 in Bradford, 20·5 in Sunderland, and 20·6 in Newcastle-upon-Tyne. The rates in the other towns ranged upwards to 27·1 in Nottingham, 28·2 in Hull, 28·6 in Liverpool, and 34·4 in Plymouth.

The deaths referred to the seven zymotic diseases in the twenty towns, which had steadily increased from 442 to 544 in the four previous weeks, further rose last week to 551, of which 190 resulted from scarlet fever, 172 from measles, 83 from whooping-cough, and 53 from fever, principally enteric. The annual death-rate from these seven diseases averaged 3·9 per 1000 in the twenty towns, and ranged from 0·5 and 0·7 in Oldham and Wolverhampton, to 5·5 and 5·8 in Leeds and Liverpool, and 7·0 in Plymouth. The 190 fatal cases of scarlet fever corresponded with the number in the previous week, and were proportionally most numerous in Leicester, Nottingham, Bristol, and Newcastle-upon-Tyne. The fatality of measles showed a further general increase, the deaths from this disease having steadily risen during the past nine weeks from 46 to 172 in the week ending last Saturday; the largest fatality of measles last week occurred in Liverpool, Plymouth, and Leeds. The mortality from whooping-cough was small compared with that which prevailed at the corresponding period of last year. The deaths referred to fever were proportionally numerous in Liverpool, Sheffield and Plymouth. Of the 15 deaths from diphtheria in the twenty towns, 8 were returned in London and 2 in Birmingham. Small-pox caused 4 more deaths in London and its outer ring of suburban districts (including 2 of unvaccinated children aged seven years), but not one in any of the nineteen large provincial towns. The Metropolitan Asylum Hospitals contained 46 small-pox patients on Saturday last, corresponding with the number at the end of each of the two previous weeks.

Considering the low temperature that prevailed throughout last week, a larger increase of mortality might have been anticipated, especially from diseases of the respiratory organs. The 1802 deaths registered in London during the week included 576 which were referred to diseases of the respiratory organs, of which 373 resulted from bronchitis,

and 153 from pneumonia; the deaths from these diseases in the seven preceding weeks had increased from 190 to 499, and the 576 last week exceeded the corrected average by 89. The annual death-rate from diseases of the respiratory organs and phthisis was equal to 10·9 per 1000 last week in London, against 9·0 in Liverpool.

GLASGOW.

(From our own Correspondent.)

LAST year, in consequence of the gloom that hung over Glasgow through the disastrous bank failure, it was deemed advisable that the annual dinner of the Faculty of Physicians and Surgeons should not be held. This year, with reviving trade and confidence, the self-imposed restriction was removed, and the Fellows met under the presidency of Dr. Andrew Buchanan, who was supported by the guests of the evening, the Presidents of the Colleges of Physicians and Surgeons of Edinburgh and Dr. P. H. Watson. The toast, "Floreat Res Medica," was given by the President with a vigour and eloquence worthy of himself and the occasion. He happily described the sentiment implied by the toast "As being the welfare of the whole human race," and contrasted the difference with fifty years ago, when, in his own experience, the toast would have been received with hated breath ere wiser legislation and a juster appreciation of the labours of our art had removed the barriers which opposed its progress. In singularly felicitous terms Dr. P. H. Watson replied for "The Extramural Schools of Scotland," humorously proposed by Professor MacLeod. Appropriate toasts were also given and replied to by the guests and Drs. Fergus, Yellowlees, Mather, and others.

Obituary.

HARRY LEACH, M.R.C.P.

IN our last number we announced with deep regret the death of Harry Leach, which took place at his residence in Albert Mansions on the evening of Wednesday, Nov. 26th. It is now our sad duty, near the close of a year singularly disastrous to the vanguard of our profession, to devote a portion of our columns to the life and labours of one whose loss will widen the gap in the ranks of our representative medical men. Mr. Leach might justly be regarded as one of these, not from any claims on account of clinical or pathological research, but from the active part he took in the furtherance of the science of public health the importance and influence of which the profession has of late years been so widely recognised.

Mr. Leach was born at Wisbech, Cambridgeshire, in 1836, and belonged to a family long known and esteemed in that borough. Having completed his early education at St. Albans, he began the study of medicine as a pupil to Dr. Walker, of Peterborough, a physician who has been peculiarly fortunate in the number of honoured and successful men trained by him for the profession. Mr. Leach afterwards studied at St. Bartholomew's Hospital, and in 1858 became qualified.

After a short service as house-surgeon to the Peterborough Infirmary, and subsequently a voyage to India, Mr. Leach settled in London, and was appointed in 1862 resident physician to the *Dreadnought* Hospital for Seamen, an institution with which he was connected, save during a short interval, up to the time of his death.

Soon after he had taken this important step in professional life, Mr. Leach showed the bent of his mind with respect to future duties and endeavours. Though experienced in diagnosis and skilled in treatment, and, as he proved by his published contributions on the pathology and treatment of scurvy and dysentery, well qualified to add to medical knowledge, he soon yielded to a strong impulse to devote himself to other than strictly medical studies. He felt himself better adapted for work of an administrative or official nature, such as influences classes and communities rather than the individual. Though placed in a position apparently unfavourable for such line of action, he forced all difficulties and unfavourable conditions to yield to him, and in course of time, whilst serving his institution most efficiently as resident medical officer, he increased its influence by suggesting and carrying to a successful issue projects of wide utility.

The first subject of importance to which Mr. Leach paid attention was the prevalence of scurvy among sailors. He found that this disease, whilst it had become nearly extinct in the navy, was then a cause of yearly increasing suffering and death amongst merchant seamen. Struck by the fact that nearly one hundred cases of sea scurvy were admitted annually into the *Dreadnought*, and aware that these numbers but barely indicated the extent of this scourge in the mercantile marine, he endeavoured to discover the causes of such an evil, and to suggest an effectual remedy. Having made out that the prevalence of the disease was mainly due to excessive adulteration of the recognised antiscorbutic juices and to carelessness in their administration, Mr. Leach recommended certain modifications in the supply and storage of lime-juice and inspection of lime-juice by an authorised officer. He also insisted very much on the necessity of a strict and full official inquiry in every case of scurvy occurring on board ship. After a long struggle, carried on with untiring energy, the good cause having been much assisted through the frequent official representations of the Seamen's Hospital Society, Mr. Leach had the pleasure of seeing a recognition, in high quarters, of the necessity of some legislation on this matter. In the autumn of 1868 the Merchant Shipping Act was amended so as to provide effectually for inspection of antiscorbutics and for such other precautions as had been suggested. Though scurvy still exists in the merchant service and opportunities are still afforded from time to time of seeing instances of this disease at Greenwich, there can be no doubt that the legislation of 1868 has had most beneficial results. In the following year the number of scorbutic patients in the *Dreadnought* had been reduced by one-half, and three years later by as much as 84 per cent.

During the epidemic of cholera in 1866, Mr. Leach's duties were much increased through his taking charge of the hospital ship *Belle Isle*, and through organising, in association with his colleague, Dr. Rooke, a somewhat extensive scheme of ship-to-ship visitation on the river Thames. After an unsuccessful application to the Privy Council, and with a full knowledge of the difficulties in the way of the performance of such duties by the riparian health officers, the managers of the *Dreadnought*, acting on the suggestions of their medical officers, undertook this work at their own cost, and carried it out with such efficiency that for three months every vessel between London-bridge and Woolwich was visited daily. Mr. Leach took part in this movement with his usual energy, and in the course of his work of supervision laid the basis of his great knowledge of all matters in relation to the Port of London. During his residence on board the *Dreadnought*, Mr. Leach lost no opportunity of expressing his strong opinion as to the utter unfitness of the old wooden hulk for hospital purposes, and the great inconvenience and danger attending the treatment of sick persons under such conditions. His endeavours in helping Dr. Rooke and his other colleagues to bring about a change in this respect never ceased until the long-continued efforts of the lay authorities of the society in this direction had been crowned with success in the removal of the establishment to a portion of Greenwich Hospital in the spring of 1870. The difficult task of rearranging the medical department under these altered conditions devolved almost entirely on Mr. Leach, who, after the death of his esteemed friend Dr. Rooke, in September, 1870, was appointed principal medical officer

to the hospital. In 1873, Mr. Leach resigned his appointment at Greenwich, and soon afterwards was chosen by the Corporation of London to fill the post, just then created, of Port Medical Officer. In 1876 he again renewed his connexion with the Seamen's Hospital, and was elected as one of the visiting physicians of that institution.

In the port sanitary appointment which he held up to the time of his death, and with which his name will ever be closely associated, Mr. Leach had full opportunity for manifesting and turning to good account his great energy and wonderful capacity for organisation. Prominent among the many difficulties in the satisfactory performance of the duties of such an office were the total absence of any guiding rules or precedents, the enormous extent of the district, and the peculiar conditions of life of the vast and ever-changing population committed to his charge. His work was commenced, moreover, at a very unfavourable period, and his first duty was to guard against a threatening epidemic of cholera. But in spite of all these difficulties the work progressed rapidly, and at the end of his first half year of office a report—the first of a long series of equally valuable productions—was published, in which were laid down clearly the principles and all the requisite details of future port sanitary work. Not content with the performance of his ordinary duties as health officer, notwithstanding the extent of a district comprised on the river between Teddington Lock and the Nore, Mr. Leach was active in directing attention to subjects which, though connected with his work, might have been left untouched by a less energetic man. He was much interested in, among many other subjects, the hygienic condition of school-ships, the construction of floating hospitals, the drainage of the upper valley of the Thames, the state of the river below the sewage outfalls, and he was quite prepared to take an active part in opposition to the late strange and reactionary proposal of preventing the importation of disease by means of quarantine.

Mr. Leach was frequently instructed by the Board of Trade to investigate cases of scurvy, and in 1868 published, with the sanction of this public office, a useful Medical Guide for captains, which is now required to be used in every ship belonging to the United Kingdom.

The history of his illness, which commenced in 1875 with an attack of hæmoptysis, is the old and sad story of an active mind and strong will contending, hopefully at times, at last in vain, against the insidious attacks of chronic pulmonary disease. He struggled long to reconcile his desire for a life of useful activity with the urgent need of rest, and he took his course of devotion to duty and to the good of others, until at last, like so many of his professional compeers, he died in harness. On two occasions, accompanied by Mrs. Leach, he spent a few months in South Africa, but soon after each visit he was found again taking his old position, and receiving the warm welcome of many a medical and social circle. In the early stages of his illness he frequently consulted Dr. Wilson Fox, and during the last days of his life was attended by his brother, by Dr. James Andrew, and by his old friend and colleague Dr. Stephen Ward.

Chief among the characteristics of Mr. Leach was an intense energy that never flagged, whether in promoting his own views or in helping others. He showed much originality in the conception of large schemes, which his tact, good temper, and high tone assisted him in carrying to a successful issue. No difficulty ever daunted him, and he attained his ends in spite of the most formidable obstructions. Active and ardent beyond the majority of men in his endeavour to attain a high professional position, he ever showed equal activity and ardour in furthering the interests of even his slightest acquaintances. No one with an honest purpose ever applied to him in vain for support and assistance. In his social relations he was the most genial of companions, hospitable, kindly, considerate, and possessed of the happy faculty of adapting himself in personal intercourse to every variety of social and mental demand. He was well read in men, and had added much to his abundant store of knowledge by extensive travel abroad.

He was buried in the cemetery at Lower Norwood on Saturday last, quietly and privately, in strict accordance with his wishes. His remains were followed to the grave by his wife, a sister, his brother (Mr. Mathew Leach, of Sheffield), a near relative, and one of his most attached friends. His work will live, and those who have known him will never cease to remember with esteem and affection the manner of man he was.

Medical News.

APOTHECARIES' HALL.—The following gentlemen passed their examination in the Science and Practice of Medicine, and received certificates to practise, on Nov. 27th :—

Myers, Arthur Thomas, Bolton-row.
Shirreff, William Henry, Edinburgh.
Thompson, Charles Emelius, Delamere-street.
Wallace, James Robert, Bengal.

The following gentlemen on the same day passed the Primary Professional Examination :—

English, Edgar, London Hospital.
Talbot, Edward, St. Thomas's Hospital.
Trevor, Henry Octavius, St. Thomas's Hospital.

THE Worcester Guardians have increased the salary of Mr. Joseph R. Buck, Medical Officer for the No. 2 district, from £45 to £65 per annum.

DR. DAVID SINCLAIR has been presented with a gold watch, and an address signed by about eighty subscribers, on resigning as Medical Officer for the Cawood dirtrict of the Selby Union, Yorkshire.

DR. ELIN, who some six months since resigned his appointment as one of the honorary medical officers of the Hertford General Infirmary, which he had held during twenty-two years, has received from the friends of the infirmary and his personal friends a testimonial in the form of a handsome English hall clock, together with a case of silver apostle spoons.

THE will of Mr. George William Callender, F.R.S., late of No. 7, Queen Anne-street, Cavendish-square, who died on Oct. 20th, at sea, on board the steamship *Gallia*, was proved on the 17th ult., by the Rev. Richard Clement Callender, his brother, the sole executor. The testator leaves all his property to his executor, upon trust for his children.—*City Press.*

WATER-SUPPLY FOR ARMAGH.—The Town Commissioners have decided to borrow £8000 from the Board of Works for new waterworks for Armagh.

SURGEON-MAJOR REYNOLDS, V.C.—A revolver and case, bearing the following inscription, will be presented to this gentleman by his fellow-students and other friends in Trinity College, Dublin, on the 17th inst. :—"Presented to Surgeon-Major James Henry Reynolds, V.C., LL.D., by his fellow-students and other friends in Trinity College, Dublin, at the Winter Commencements, 17th December, 1879, when the degree of LL.D. (*honoris causâ*) was conferred on him by the University of Dublin."

PRIZES.—Competitors for the Collegial Triennial prize of fifty guineas, or the John Hunter medal in gold to that amount, and of the Jacksonian prize of about £12, are reminded that the essays must be sent in to the Royal College of Surgeons on or before Wednesday, the 31st instant. The subject for the first-named prize is "The Anatomy and Physiology of the Third, Fourth, and Sixth Nerves, as illustrated by observation and experiment in health and by reference to the effects of injury and disease." The subject for the Jacksonian prize is "The Disease of the Lymphatic System known as Hodgkin's Disease, or Lymphadenoma." For the first-named prize no award has been made since 1858.

Medical Appointments.

ATKEY, W. T., M.R.C.S.E., L.R.C.P.L., L.S.A.L., has been appointed House-Surgeon and Secretary to the West Sussex, East Hants, and Chichester General Infirmary and Dispensary, vice Ross, resigned.

BICKERTON, Mr. T. H., has been appointed a House-Physician to the Royal Infirmary, Liverpool.

CAMPBELL, P. E., M.B., C.M., has been appointed Junior Assistant Medical Officer to the Warwick County Lunatic Asylum, vice Urquhart, resigned.

DAIN, F. R., M.R.C.S.E., M. & L.S.A.L., has been appointed Certifying Factory Surgeon for the District of King's Cliffe, Northamptonshire.

DUIGENAN, Dr. P. S., has been appointed Medical Officer, Public Vaccinator, &c., for the Johnstown Dispensary District of the Edenderry Union, at £120 per annum and fees, and £15 per annum as Medical Officer of Health, vice Allen, resigned.

HARRISON, Dr. A. J., has been appointed a Physician to the Bristol General Hospital, vice Siddall, resigned.

HOULGRAVE, Mr. A., has been appointed a House-Surgeon to the Royal Infirmary, Liverpool.

JONES, A. E., M.R.C.S.E., has been appointed House-Surgeon at the London Hospital, vice Davies, whose time has expired.

JONES, Mr. G. J., has been appointed a House-Surgeon to the Royal Infirmary, Liverpool.

LARCHER, V., L.R.C.S.Ed., L.R.C.P.Ed., has been appointed Junior House-Surgeon to the Carlisle Dispensary, vice Paterson, promoted.

LYNHAM, J. I., M.D., C.M., has been appointed Professor of the Practice of Medicine at Queen's College, Galway, vice Calahan, resigned.

MACBRYAN, H. C., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed a Clinical Assistant in the West Riding Asylum, vice Rutherford, appointed Assistant Medical Officer to the Durham County Asylum.

OLDMAN, J., M.R.C.S.E., L.S.A.L., has been reappointed Medical Officer of Health for the Huntingdon Urban Sanitary District, at £24 for one year.

PATERSON, A. G., L.R.C.S.Ed., L.R.C.P.Ed., has been appointed Senior House-Surgeon to the Carlisle Dispensary, and Medical Officer to the Fever Hospital, vice Hunt, resigned.

ROWLANDS, W., L.K.Q.C.P.I., has been appointed a House-Surgeon to the Royal Infirmary, Liverpool.

SOUTHERN, J., M.R.C.S.E., L.S.A.L., has been appointed Certifying Factory Surgeon for the District of Ludlow, Salop.

STKES, Mr. R. P., has been appointed a House-Physician to the Royal Infirmary, Liverpool.

TAYLOR, J., L.K.Q.C.P.I., L.R.C.S.I., has been appointed Medical Attendant to the Royal Irish Constabulary, Tandragee, co. Armagh, vice Hamilton, resigned.

WILLETT, A., F.R.C.S.E., has been appointed Surgeon to St. Bartholomew's Hospital, vice Callender, deceased.

WRAY, G. B., M.R.C.S., L.S.A.L., has been appointed Resident Surgeon to the Annesley Colliery.

WYLIE, D., L.R.C.S.Ed., has been appointed Certifying Factory Surgeon for the District of Erroll, Perthshire, vice J. Wylie, L.R.C.P.Ed., deceased.

BOOKS ETC. RECEIVED.

DAVID BOGUE, London.

Osteological Catalogue. Part I. Man. By W. H. Flower.

J. & A. CHURCHILL, London.

The Treatment of Fits. By Dr. J. H. Waters.
Family Medicine for India. By W. J. Moore.
Notes on Fever Nursing. By J. W. Allan.
Clinical Lectures on the Diseases of Women. By Dr. J. M. Duncan.
How to Use a Galvanic Battery. By Dr. Tibbits.

M. DUNOD, Paris.

Traité Elémentaire d'Analyse Qualitative des Matières Minérales. Par A. Ditte.
Essai de Méchanique Chimique. Par M. Berthelot. Vols. I. & II.

FANNIN & Co., Dublin.

The Medical Profession. By W. Rivington. (First Carmichael Prize Essay.)
The Medical Profession. By T. Laffan. (Second Carmichael Prize Essay.)

J. GREENHILL, London.

The British Almanac. 1880.

G. KENNING, London.

The Cosmopolitan Masonic Calendar, Diary, and Pocket-book for 1880.

H. K. LEWIS, London.

The Theory and Practice of Medicine. By F. T. Roberts. Vols. I. & II.

LONGMANS, GREEN, & Co., London.

Transactions of the Clinical Society of London. Vol. XII.

JOHN MURRAY, London.

The Life of Erasmus Darwin. By E. Krause.

SIMPKIN, MARSHALL, & Co., London.

The Rise and Development of Organic Chemistry. By C. Schorlemmer.

Eminent Medical Men of Asia, Africa, and America. By Surgeon-General E. Balfour. (H. Renshaw.)—On Syphilis. By Dr. C. S. Von Ilanor. (Urban & Schwarzenberg, Wien.)—The New Quarterly Magazine; October. (Kegan, Paul, & Co.)—The Education of Girls. By Dr. N. Allen. (T. W. Bicknell, Boston.)—Graham's Temperance Guide for 1880. (G. H. Graham, Maidstone.)—The Microcosm of Disease. By Dr. W. Moore. (J. Falconer, Dublin.)—Die Tuberkulose von Standpunkte der Infectionslehre. By J. Cohnheim. (A. Edelmann, Leipzig.)—Etude sur l'Ictére Grave. Par le Docteur A. Mossé. (Baillière, Tindall, & Cox, London.)—Atlas of Skin Diseases. By Dr. L. A. Duhring. Part VI. (J. B. Lippincott & Co., Philadelphia.)—De l'Assainissement des Villes et des Habitations. By Le Dr. J. Félix. (M. de H. Manceaux, Bruxelles.)—Medical Education and Medical Organisation. By W. Rivington. (Baillière, Tindall, & Cox.)—Some Remarks on Workhouse Hospitals. By T. M. Dolan. (C. Goodall, Leeds.)—Harvey: La Circulation du Sang. By C. Richet. (M. G. Masson, Paris.)—Good Words; December. The Sunday Magazine; December. (Isbister & Co.)—Fraser's Magazine; December. (Longmans, Green, & Co.)—Aneurism. By Dr. F. Flint. (E. Gould & Son, London.)—The Leisure Hour; December. The Sunday at Home; December. The Boys' Own Paper; December. (The Religious Tract Society.)—The Magazine of Art. Part XX. (Cassell & Co.)

Births, Marriages, and Deaths.

BIRTHS.

BURMAN.—On the 21st ult., at Bamburgh, the wife of C. Clark Burman, L.R.C.P.Ed., L.R.C.S.Ed., of a daughter.

BROOKHOUSE.—On the 1st inst., at Manor-road, Newcross, the wife of C. T. Brookhouse, M.D., of a son.

FLINN.—On the 22nd ult., at Ogley Hay House, Brownhills, the wife of David Edgar Flinn, L.K.Q.C.P.I., of a son.

KING.—On the 27th ult., at Ambleside, Westmoreland, the wife of William Moore King, M.R.C.S., of a son.

NAPIER.—On the 24th ult., at Abbey Lands, Dunbar, the wife of Alex. D. L. Napier, M.D., of a son.

MARRIAGES.

KELLETT—DU PRÉ.—On the 29th ult., at Charles Church, Plymouth, by the Rev. H. T. Hole, Rector of Plympton St. Maurice, Solomon Kellett, Esq., Surgeon R.N., to Georgie, youngest daughter of John Du Pré, Esq., of Plymouth. No cards.

POCOCK—MAY.—On the 26th ult., at St. John's, Angell-town, by the Rev. C. J. Rashleigh Cooke, M.A., Walter Pocock, Surgeon, of Sunbury House, Brixton (third son of William Pocock, M.D., of Streatham), to Florence, second daughter of the late Thomas May, Esq., of Hamburg. At home every Tuesday after Dec. 31st.

PRESTON—CAM.—On the 27th ult., at the Parish Church of St. Marylebone, by the Rev. Thomas Preston, M.A., Vicar of Swaffham Prior, Cambs. (father of the bridegroom), assisted by the Rev. D. Collyer, Vicar of Castleacre, Norfolk, Alfred Chevallier Preston, M.R.C.S., to Harriet Eliza, eldest daughter of the late William Henry Cam, M.D., of Uxbridge.

DEATHS.

COATES.—On the 24th ult., Samuel Coates, M.D., of Portumna, co. Galway.

HENDERSON.—On the 28th ult., at Pavilion-parade, Brighton, Andrew Henderson, M.D., aged about 40.

HUNT.—On the 26th ult., at Herne Bay, Thomas Hunt, F.R.C.S.E., late of Dorset-square, aged 81.

MARTIN.—On the 22nd ult., at Weymouth, Dr. Edmund Glanville Martin, aged 74.

MOUNTJOY.—On the 28th October, on the homeward passage to England, John William Mountjoy, M.R.C.S.E., Indian Medical Service.

ORTON.—On the 29th ult., at Narborough Hall, Leicestershire, William Orton, M.R.C.S.E., aged 69.

N.B.—*A fee of 1s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

METEOROLOGICAL READINGS.

(Taken daily at 8 a.m. by Steward's Instruments.)

THE LANCET OFFICE, Dec. 4th, 1879.

Date.	Barometer reduced to Sea Level, and 32° F.	Direction of Wind.	Dry Bulb	Wet Bulb	Solar Radia in Vacuo	Max. Temp Shade	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
Nov. 28	30·13	N.E.	36	35	..	42	31	..	Overcast
,, 29	29·96	N.E.	37	36	..	40	33	..	Overcast
,, 30	29·83	N.	31	..	..	36	25	..	Fine
Dec. 1	29·78	N.	26	..	..	35	23	..	Overcast
,, 2	29·95	E.	25	..	..	32	21	..	Overcast
,, 3	29·88	E.	24	..	..	32	20	..	Foggy
,, 4	29·61	N.E.	30	..	..	33	23	..	Overcast

Notes, Short Comments, and Answers to Correspondents.

NEWSPAPER THERAPEUTICS.

Dr. W. H. Pearse directs our attention to the fact that a medical contemporary confesses that its publisher sent Dr. Pearse's article to the *Plymouth Journal*. Until this acknowledgment was made, he was entirely ignorant of the way in which it came to be published in the lay journal. We sympathise with Dr. Pearse on the annoyance which he evidently feels at an occurrence for which he is entirely blameless.

Dr. Maciagan, (Blairgowrie.)—The Act is a very unsatisfactory one, like many recent Acts of Parliament. It empowers justices of the peace to give licences to persons to keep retreats for the detention of habitual drunkards; but the habitual drunkards can only be received on their own application. This is very much like a Sunday-closing Bill that would give power to publicans to close on Sundays, or at eight o'clock at night, on their own application.

M.R.C.S., L.A.C.—Very obviously the living head is pushed backwards through the back of the chair, while the artificial one remains in front.

Mr. Robinson.—We are much obliged.

"A GREAT WORK IN SURGERY."

THE recent success in ovariotomy, especially in the hands of Keith and Wells, is made the subject of a long article in our contemporary, the *Scotsman*, who cannot generally be charged with want of taste. The achievement of Dr. Keith—seventy ovariotomies without a death—is one upon which not he alone, but Surgery itself, must be congratulated. We have never opened our columns to any communication with greater pride and pleasure than to successive communications from Dr. Keith, reporting the rising rate of recoveries of successive batches of cases; but we gravely question, perhaps the kindness, certainly the taste, of making such achievements the subject of articles in daily papers, and we are confident that in doing so we shall be strongly supported by Dr. Keith himself. In our last number we had to comment on a paragraph in a Welsh paper, lauding the wonderful skill of a surgeon in performing the "rare" operation of lithotomy successfully. There are many surgeons who could record scores of cases without a death, and this is an operation affecting all classes and both sexes. But everybody feels it to be indelicate and inappropriate that newspapers should become the vehicles of such subjects. Medical men know further that the reason why so healthy and dignified a tone prevails in regard to the non-proclaiming of professional successes on the housetops and in newspapers is because the heads of the profession and the men who do the feats are the last to sanction such publicity. It is on this account chiefly that we regret the article in our contemporary, and that we feel sure our regret will be shared by the surgeon who is the subject of misplaced but not undeserved panegyric.

Mr. Hardman.—There is nothing in it. The old story.

PROPAGATION OF DISEASE BY MEANS OF SCHOOLS.

To the Editor of THE LANCET.

SIR,—I beg to bring under your observation, and, through your journal, to the notice of the profession, what I think calls for action on the part of the public, if not the Government.

While sanitary science is endeavouring to stamp out disease, School Boards (unintentionally no doubt) seem to make the Board Schools hot beds and nurseries for disease of every kind. A child, for instance, is taken ill, and kept at home, with a mild attack of scarlatina. The parents are perhaps too poor or too ignorant, or it may be too careless, to ask the advice of a doctor. After a few days the school inspector calls, threatens a summons against the parents or guardians unless a medical certificate, stating the cause of absence, be sent to the master, and to prevent the one, and to save the expense of the other, the child is sent back to school, not alone at the risk of its own life, but to infect many others; and so it goes on. Go into any of the houses of the poor where the children are ill, and you will find upon inquiry that you will invariably be told the illness was brought from school. Such being the case, neither our own nor our children's lives are safe, and I have, therefore, no hesitation in saying that at this moment every compulsory school in London should be shut up and disinfected; and if this were done, and a medical gentleman were appointed, whose duty it should be in all cases of absence, through illness, to certify what that illness is, a right move would be made to aid medical science in stamping out disease instead of propagating it, as is being done at present.

I hope you will forgive me for occupying so much of your time and space; and as the question I have raised is one which concerns us all, I trust, to ensure the insertion of this letter, it will be sufficient to subscribe myself,

Yours truly,

London, Nov. 17th, 1879. M.

LIGHT HUES FOR WINTER DRESSES.

To the Editor of THE LANCET.

SIR,—I wish to call attention to the remarks made in your journal a fortnight ago relative to "the undoubted effect of colour on the radiating power of clothing," and the statement that "light-coloured substances do not part with their heat so readily as dark."

Until about fifteen years ago it was a matter of doubt whether colour did or did not regulate the absorption or emission of heat rays; but the experiments of Tyndall in 1865 removed these doubts by showing most clearly that, although the colour of a substance may materially affect the rate with which it will become heated by the *luminous rays* of the sun, yet "as regards the radiation and absorption of *non-luminous* heat, colour teaches us nothing" (Tyndall's "Fragments of Science," vol. i., p. 26, edit. 1879).

The experiments on which this opinion was based have, so far as I am aware, never been controverted; and in most text-books may now be found some remark equivalent to the following (quoted from Ganot's Physics," by Atkinson), that "the colours have no influence on the radiating power."

With regard to polar bears, it would be hard to determine whether the animals are disciples of the exploded theory or not, but it is easy to conceive a reason for their colour very different from that alleged in the article. A "grizzly" on the snow and a polar bear on dark soil would be such conspicuous objects that the prey which fell into their jaws would be moles indeed.

Yours &c.,

London, Dec. 1st, 1879. F. W. T.

*** We adhere to our interpretation of the facts.—ED. L.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following were the questions on Anatomy and Physiology submitted to the thirty-two candidates at the half-yearly primary examination for the Fellowship of the College on the 21st ultimo, when they were required to answer all the four questions:—

1. What do you understand by the term "arterial tension"? How is its amount estimated? By what circumstances is it modified?
2. Describe the minute anatomy of the grey matter of the cerebral hemispheres in man. What functions have been assigned to it? and upon what evidence?
3. How would you expose in an entire subject the arch of the aorta as far as the fourth dorsal vertebra? What are the relations of each part of the arch? Give also the topographical indications on the chest surface.
4. The brain having been removed, how would you trace out the course, connexions, and distribution of the second division of the fifth nerve?

The following were the questions on Pathology, Therapeutics, and Surgery submitted to the candidates at the written examinations, when they were required to answer all the four questions:—

1. Give the pathology and clinical characters of the disease known as lymphadenoma.
2. Discuss the pathology and treatment of knock-knee.
3. In injuries of the lower extremity, what circumstances should guide you as to amputation, primary or secondary, of the leg or thigh?
4. Describe the changes which blood extravasated in the tissues may undergo.

Mr. George Smith, (Axbridge.)—Dr. Parkes estimated the quantity of water required per day, per head of population, for domestic purposes (without baths and closets), at twelve gallons. This estimate is most generally followed.

Mr. Walter Garstang.—Unfortunately the distinctions we desire to see established in practice are not recognised.

Dr. C. J. H. Smith.—The communication has unfortunately been mislaid.

UNUSUAL INJURY TO THE EAR.

To the Editor of THE LANCET.

SIR,—The case reported by Mr. Brett in the last number of THE LANCET is interesting; but I think that the accident in question is not nearly as unusual as supposed. The giving way of the membrana tympani is a very common occurrence in cases of catarrh, and I have myself also seen the membrane ruptured by *too forcible* inflation with Politzer's apparatus during an attack of the same. As a rule, such injuries heal rapidly *without treatment* in healthy subjects, in whom the secretion within the cavity of the tympanum is non-purulent, and no loss of tissue or ultimate deafness results. When the tympanic cavity is full of fluid, and the Eustachian tube is tumefied and occluded, the membrana tympani is, doubtless, subjected to considerable outward pressure, which seems soon to interfere with its due nutrition, and renders it far more liable to rupture and ulcerative destruction. On the membrane giving way, the patients usually find the hearing improved, instead of its being made worse. From the description given of Mr. Brett's case, one would suspect a large ulcerated aperture in the membrane; but as there appears to be little or no otorrhœa, the case ought to do well under proper treatment. He should only be allowed to blow the nose most gently, if at all, during treatment. The ear should be gently syringed out twice a day with warm water, and all secretion &c. removed, after which two drops twice a day of the following should be dropped into the affected ear:—Sedative solution of opium, subacetate of lead, glycerine-borax, of each one scruple; water, two scruples. As a rule, this application gives little or no pain, and is very effective in preventing discharge and healing the membrane. In many cases at the same time it is well to give a mixture such as the following, together with cod-liver oil:—Hypophosphite of lime, tincture of nux vomica, of each one drachm; water to six ounces: one ounce to be taken three times a day.

I am, Sir, yours truly,

J. M. E. SCATLIFF, M.D.,
Honorary Surgeon to the Brighton and Sussex Throat and Ear Dispensary.

Dec. 1st, 1879.

To the Editor of THE LANCET.

SIR,—In answer to your correspondent, Mr. F. C. Brett, I should say his patient is suffering from perforation in the left ear, caused by violently blowing his nose. Having seen many such cases, I have always found a piece of moistened cotton-wool applied over the perforated tympanum to answer well, enabling the patient to hear in most cases.

Yours &c.,

Forest Hill, Dec. 2nd, 1879. SPENCER T. SMITH, M.D., &c.

To the Editor of THE LANCET.

SIR,—Mr. Brett's patient (whose case he mentions in your last issue) is evidently suffering from a perforation of the membrana tympani, the result probably of tympanic catarrh. He should have his ear examined by some one acquainted with aural surgery, in order that treatment may be adopted to improve the hearing and, if possible, cause the perforation to close. Without this examination no rational treatment can be carried out.

Yours truly,

Brighton, Dec. 1879. C. CRESSWELL BARER, M.B. Lond.

THE MUTABILITY OF STATUS.

WE have been favoured by *Dr. G. A. Brown*, of Tredegar, with a narrative, full of human and medical interest, touching a man who was once in medical practice, but who was, according to the verdict of a coroner's jury, "Found dead" in a chamber communicating with a flue attached to one of the Tredegar Iron and Coal Company's blast furnaces, where the deceased had been working for some time as a "mason's labourer." Amongst his papers and property were two recognised diplomas. Besides this he was a Freemason, and had many qualities which excited the interest of those who knew him and with whom he had worked. Our readers will anticipate the stumbling-block which tripped a man so well fitted for a successful life. It is so frequent a snare, even in our profession, that we need scarcely name it—drink. We very much regret that our space will not permit us to insert in full Dr. Brown's narrative, in which he expresses his regret that the deceased should have preserved so complete an *incognito* as to make it impossible for his medical neighbours to help him as they would gladly have done. It is gratifying that Dr. Brown is able to end his painful and thrilling story by saying that "the mason's labourer" was at the time of his death, which seems to have been sudden—perhaps from heart disease or the deadly gases of the flue,—beginning to recover himself, and that, had he lived, he would probably have resumed his place in the ranks of the profession from which he had fallen.

Dr. Bell.—Early next year, if sent at once.

THE PHYSIOLOGY OF THE LARYNX.

To the Editor of THE LANCET.

SIR,—I am sorry that Mr. Illingworth is able to strain such an absolute agreement with any of his theories out of anything I have written. My qualified approval of his idea that the vocal cords were not elongated during phonation was only intended to imply that if they stretched too readily, their tension, expressing thereby the firmness or rigidity of their edges, could not be effectively increased; for it appears to me to be a settled fact that alteration of pitch in the chest-voice is due to variation of tension of the vocal bands, and that this tension is obtained mainly by the action of the crico-thyroid muscle. Everyone who has experimented with the detached larynx knows how easy it is to produce a musical scale by varying the tension of the vocal cords, and this property of theirs, or perhaps of yellow elastic tissue in general, is the more remarkable as from artificial larynges, constructed with strips of india-rubber or caoutchouc (Müller, Fournié), or of parchment (Malgaigne), only three or four notes at irregular intervals can be obtained. Now, the maximum amount of elongation of the vocal cords that can occur on closure of the crico-thyroid space is, in a larynx of average size, about one line; and if it be allowed that when a strain is put upon the vocal bands the cartilages will also yield (as I think they do, especially on account of the peculiarly elastic structure of the lamina media of the thyroid cartilage, discovered by Rombaud, and minutely described by Luschka, "Der Kehlkopf," 1871, p. 67), it must be concluded that the stretching of the vocal cords during phonation must be very slight indeed. No further than this was my agreement with Mr. Illingworth intended to go. As to another point also, if he had read my letter carefully he would not have supposed that I thought there was any analogy between the high notes drawn by Müller and others from the detached larynx and the falsetto voice, as I expressly stated that these notes were higher than the subject in life could have emitted by such means—i. e., by tension of the vocal bands. My idea of the falsetto is that it is formed by a progressive shortening of the vocal cords, and that this shortening (by an application of Henle's observation "Handb. d. Eingeweid.," 1866, p. 249) is brought about by a concentric sphincter-like action of all the constrictive glottic muscles. But the acoustic principles of voice production would be the same as in the chest-voice. And with respect to the comparison of the falsetto register to whistling, an opinion which regards any tones of the voice, a highly composite sound, as similar to one of the best examples of a nearly simple sound, must be rejected by acousticians as altogether untenable. I may say, finally, that all my ideas here given, as well as my estimate of Mr. Illingworth's theories (which have been travelling upwards through the medical journals since 1876) were formed before the date of my first letter, as they were, in fact, at that time in print for a work that has now been for some months published.

I am, Sir, your obedient servant,

Finsbury-square, Nov. 29th, 1879. GORDON HOLMES.

P. D.—Such accumulations occur in the course of a variety of morbid states without producing the phenomena and symptoms named.

An Observer.—Intelligence and experience must go hand in hand to be really useful.

"NEWSPAPER NOTICES OF MEDICAL WORK."

To the Editor of THE LANCET.

SIR,—Having seen in THE LANCET of Nov. 29th a copy of a paragraph, which appeared in a local paper relating to a case which I had operated upon, I can only say that I was entirely ignorant of its publication, and quite agree with your comments deprecating the insertion of medical reports in lay papers.

Yours truly,

London, Dec. 1st, 1879. H. N. DAVIES.

Sceptic.—We know of no experiments in which the inoculation of the saliva of a healthy dog has produced rabies. Our contemporary probably had a confused recollection of some rare cases in which a dog has presented symptoms of rabies after being bitten by a dog not apparently suffering from the disorder. It is probable that in these cases there has either been another unknown bite from a rabid animal, or the cases were examples of "spontaneous rabies."

Mr. H. E. Gifford.—The question is a legal one, but admits of but one sound answer: Only registered persons can recover medical charges. Registered persons cannot recover charges for services rendered solely by an unqualified assistant.

Dr. J. B. Gill.—Yes.

"TRAUMATIC ORIGIN OF COLD ABSCESS."

To the Editor of THE LANCET.

SIR,—Since sending my reply to the reviewer of my paper on the "Traumatic Origin of Cold Abscess," &c., I have received a note from Dr. J. D. Bryant, Professor of Anatomy in Bellevue Hospital Medical College, in which he states that the subject he is now dissecting has ten digitations to the serratus magnus, and that one of them is inserted in the ninth rib. I enclose a copy of his letter, which please insert, and oblige,

Yours truly,

New York, Nov. 14th, 1879. LEWIS A. SAYRE, M.D.

P.S.—In addition to the references given in my note of the 12th inst., I would refer my reviewer to Cruveilhier's Anatomy, edited by Granville Sharp Patterson, 1st Amer., from last Paris edition, p. 222; also Henle's Anatomy, p. 96, who both describe the serratus magnus as often attached to the ninth rib.

Bellevue Hospital Medical College,
New York, Nov. 12th, 1879.

MY DEAR DOCTOR,—I noticed in THE LANCET, dated Oct. 25th, 1879, a very severe and unjust criticism of your statement of the anatomy relating to one case of sub-fascial abscess reported by you.

The critic asserted, in referring to the attachment of the serratus magnus, "As this muscle is not fixed to the ninth rib, and as it ought never to be a matter of doubt," &c. The rule is, 'tis true, that the serratus magnus is not attached to the ninth rib; but in all who have a well-developed muscular system this attachment (to the ninth rib) may, and often does, occur. In the subject now being used in my lectures will be found ten serrations or digitations to the serratus magnus muscle: one arising from the upper rib, two from the second, and one from each rib below the second down to and including the ninth.

If the gentleman who criticised you so unjustly, and seemingly with prejudice, had consulted many of the ordinary text-books on Anatomy, he would have saved you much of annoyance and himself of seeming pedantry.

Very respectfully yours,

Prof. Lewis A. Sayre. (Signed) J. D. BRYANT, M.D.

TYPHOID FEVER: ADDRESS BY SIR W. JENNER.

To the Editor of THE LANCET.

SIR,—I have had the benefit of reading the letter of "S. L." regarding Sir Wm. Jenner's lecture on Typhoid Fever.

After having treated hundreds of cases at home and in India, I have found nothing better for typhoid fever (or indeed for any hæmorrhagic disease) than turpentine. I would not like, however, to put it down as a panacea, like Holloway's pills &c. It is not every patient who can take turpentine, nor everyone who can take "belladonna."

"S. L." also remarks: "Brandy was, however, administered once and freely, when I thoroughly revived and felt quite comfortable, but exhausted; but this soon went off after taking brandy and wine very liberally. I then made a favourable recovery, with the exception of a painfully irritable bladder for a few days. (Query: Was this due to belladonna?)." I am positively certain, and I think the majority of medical men will agree with me in saying, that the irritability of the bladder was caused by the brandy and wine *freely taken*, and not by the belladonna!

In the last paragraph of the letter, "S. L." says: "I am thoroughly convinced from personal observation and experience that many people suffer from typhoid fever without being aware of its existence or confined to bed." Certainly, if every patient were to take brandy and wine freely and liberally when he or she got ill, they would have feverishness of the "typhoid type," but not necessarily the *zymotic* disease recognised as typhoid fever.

Yours truly,

London, Dec. 1st, 1879. ALEXANDER NAIRNE, L.R.C.P.E.

ALBUMINURIA.

To the Editor of THE LANCET.

SIR,—Would you kindly permit me to ask the opinion of some of your readers who have given the above subject their special attention, Is the persistent presence of albumen in the urine for more than twelve months (though the health of the patient has considerably improved during that time) to be taken as a necessarily fatal symptom? There has been no tendency to dropsy, nor can there be any "casts" detected in the urine, which is plentiful, specific gravity ranging from 1070 to 1012; no cardiac mischief; but the patient has suffered from gall-stones, jaundice, &c., which has been entirely relieved with Carlsbad salts. I should mention there is also a slight tendency to hereditary gout, and there is a considerable loss of weight; the appetite and general health good.

Yours &c.,

November 19th, 1879. A SUBSCRIBER.

Oxoniensis.—To the Open Science Scholarships: Henry Lewis Jones, B.A., Caius College, Cambridge; T. W. Shore, Hartley Institute, Southampton. To the Preliminary Scientific Exhibition: J. B. Nias, B.A., Exeter College, Oxford, late of Winchester School. To the Jeaffreson Exhibition for Classics: A. J. Thistleton, Christ Church, Oxford.

"LUXURIA."

To the Editor of THE LANCET.

SIR,—With reference to Professor Rogers' letter in your issue of Nov. 22nd, I beg respectfully to call his attention to the fact that the passages quoted throw no new light upon the disputed question of the antiquity of syphilis. They, along with many similar passages, have been bandied about among syphilologists during the last two centuries, and, regarding their exact bearing, each authority has his own opinion according to the side he takes.

Gascoigne's remarks were first laid before the profession, I believe, by William Becket, a surgeon in London, in a paper on the Antiquity of the Venereal Disease (Philos. Trans., vol. xxxi., 1720), the second of three papers contributed by him on the subject, all evincing minute antiquarian research. His arguments and quasi-proofs do not seem, however, to have convinced everybody, since we find, a few years later, John Astruc, a Frenchman, in his Treatise on the Venereal Disease (English translation, London, 3 vols., 1737), combating *seriatim* Becket's references, this of Gascoigne's among the rest.

I need not quote here the arguments advanced by Astruc against the assumption that syphilis is the disease referred to by Gascoigne, since anyone interested, and having access to a good library, can find them by reference to Barrowby's translation of Astruc, vol. i., pp. 47-50.

Yours faithfully,

Carlisle Dispensary, Nov. 24th, 1879. TOM HUNT, M.B.

THE NAVAL MEDICAL DEPARTMENT.

To the Editor of THE LANCET.

SIR,—As it is probable that the medical officers of the navy may be granted similar pay and retirement to their army brethren, I am induced to solicit your powerful advocacy to plead that in any future Warrant for the Naval Medical Department, half-pay time, when it has been *compulsory*, may be allowed to count, say, as half, or even one-third full-pay time, both towards increase of pay and retirement; and, even with this concession on the part of the Admiralty, we would take much longer to put in our twenty years than army medical officers, who, as a rule, are not a day on half-pay during that period; the average loss to the fleet surgeons being two years, the not unusual loss being much more.

Your obedient servant,

December, 1879. HOPE.

COMMUNICATIONS, LETTERS, &c., have been received from — Dr. Squire, London; Professor Spence, Edinburgh; Mr. Berkeley Hill, London; Dr. Sedgwick, London; Dr. Fothergill, London; Dr. Dowse, London; Mr. Nairne, London; Dr. E. Lane, London; Mr. Paterson, Carlisle; Mr. Allward; Dr. Sayre, New York; Mr. Claremont, Sheffield; Dr. Leeson, Twickenham; Mr. Wrey, Nottingham; Mr. Davies, Cymer; Dr. S. Belcher, London; Mr. Willett, London; Messrs. Maw and Co., London; Mr. Giffard, Egham; Dr. Macpherson, London; Mr. Jones, West Bromwich; Mr. Hardman, Blackpool; Dr. E. S. Wood, London; Mr. Webb, Fairford; Mr. Hewitson, Leeds; Mr. Hall, London; Dr. Scatliff, Brighton; Mr. Sowerby, Stokesley; Mr. Mogg, Redditch; Dr. Wolfe, Glasgow; Mr. Boon, St. Kitts; Mr. Hillis, British Guiana; Dr. Smyth, Forest-hill; Mr. S. Langley, Margate; Mr. R. C. Lucas, London; Mr. Gates, Wolfville, Nova Scotia; Dr. Lloyd; Dr. Shultz; Mr. Morton, Belfast; Mr. Collins, London; Dr. Alexander, Bradford; Mr. Reeves, London; Mr. Campbell, Hatton; Mr. Garstang, Blackburn; Dr. Marhaltz, Pattendale; Dr. Baber, Brighton; Mr. Stocker, Upton; Mr. Townsend, Exeter; Dr. M'Carthey, Darlington; Mr. Hunt, Blackheath; Dr. Bell, Glasgow; Mr. Osgood, Boston, U.S.A.; Mr. Pease, Roxburg, U.S.A.; Mr. Leach, London; Mr. Dain, Kingscliffe; Messrs. White and Stratten, Hull; Mr. A. E. Jones, London; Dr. Pearse, Plymouth; Dr. Neil, Macclesfield; Messrs. Ingram and Son, Hackney; Mr. Pain, London; Dr. D. Johnson, London; Mr. C. Gaffney, London; Mr. Corn, Paris; Mr. G. Holmes, London; Dr. Gill, Hastings; Mr. Roberts, Highgate; Dr. Taylor, Bayswater; Mr. Plowright, King's Lynn; Sceptic; Cyril; F. W. T.; An Observer; E. L. G.; X.; P. D.; Oxoniensis; Ulundi; H.; &c. &c.

LETTERS, *each with enclosure*, are also acknowledged from—Mrs. Martin, Glasmere; Mr. Richardson, Rhayader; Mr. Clarence, Brighton; Mr. Clark, Somerset East, Cape of Good Hope; Mrs. Furness, Darlington; Dr. Clark, Ongar; Dr. Moody, Crewe; Messrs. Foster and Alymer, Newcastle-on-Tyne; Mr. Preston, Hastings; Mr. Warton, Biggleswade; Mr. Rogers, Newport, Jamaica; Mr. Wright, Accrington; Dr. Jones, Brecon; Mr. M'Brian, Wakefield; Mr. Wilson, Eastbourne; Mr. Jollye, Donington; Mr. Hudson, Hull; J. H. N., Great Yarmouth; W. W., Stockport; Medicus; P., Huddersfield; F. S., York; C. F. W., Grantham; Surgeon; Physician, Saffron Walden; Medicus, Callington; Alpha; Lambda; B. H., Bow; F. C.; X. Y. Z.; T. K. D.; Medicus, Islington; R. C., Liverpool; Medicus, Nottingham; W. F. D., Kilburn.

Lincolnshire Chronicle, Western Morning News, Middlesex Mercury, Brighton Guardian, Glasgow Herald, Torquay Times, Scotsman, Sunderland Daily Echo, Builder, &c., have been received.

Medical Diary for the ensuing Week.

Monday, Dec. 8.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS. — Operations, 10½ A.M. each day, and at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.
ST. MARK'S HOSPITAL.—Operations, 2 P.M.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
MEDICAL SOCIETY OF LONDON. — 8½ P.M. Microscopical Evening. — Dr. W. R. Gowers: Microscopical Demonstration of the Diseases of the Spinal Cord. The Specimens will be on view at 8 P.M.—Mr. G. C. Coles will exhibit the Laryngo-phantom.

Tuesday, Dec. 9.

ST. MARK'S HOSPITAL.—Operations, 9 A.M.
GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 3 P.M.
ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8 P.M. Ballot.—8½ P.M. Mr. H. Morris, "On two Cases of Carcinoma of the Breast, preceded by so-called Eczema of the Nipple and Areola." — Dr. Thin, "On Eczema of the Nipple and Cancer of the Breast, the Nature and Mutual Relations of their Morbid Conditions."

Wednesday, Dec. 10.

MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL. — Operations, 1½ P.M., and on Saturday at the same hour.
ST. THOMAS'S HOSPITAL. — Operations, 1½ P.M., and on Saturday at the same hour.
KING'S COLLEGE HOSPITAL. — Operations, 2 P.M., and on Saturday at 1 P.M.
LONDON HOSPITAL.—Operations, 2 P.M., and on Thursday and Saturday at the same hour.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL. — Operations, 2 P.M., and on Saturday at the same hour.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN. — Operations, 2½ P.M.
HUNTERIAN SOCIETY. — 7½ P.M. Council Meeting. — 8 P.M. Dr. Herman will exhibit a Specimen of Missed Abortion, and relate a Case of "Concealed Accidental Hæmorrhage."—Mr. Rivington, "On two Cases of Aneurism treated by Esmarch's Bandage."
ROYAL MICROSCOPICAL SOCIETY.—8 P.M. Mr. G. Guiliver: "Classificatory Significance of Rhaphides in Hydranges."—Mr. Washington Teesdale: "Simple Revolving Object-holder."—Professor M. Duncan, "On a part of the Life-cycle of Clathrocystis Æruginosa." — Professor Abbe: "Some remarks on the Apertometer."

Thursday, Dec. 11.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—1½ P.M. Surgical Consultations.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL. — Operations, 2 P.M., and on Friday at the same hour.
HARVEIAN SOCIETY.—8½ P.M. Harveian Lectures: Mr. Edmund Owen, "On Certain Practical Points in connexion with the Surgery of Childhood."

Friday, Dec. 12.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2 P.M.
ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
QUEKETT MICROSCOPICAL CLUB.—8 P.M. Ordinary Meeting.

Saturday, Dec. 13.

ROYAL FREE HOSPITAL.—Operations, 2 P.M.

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